Letter 18

COMMUNITY ADVISORY COMMITTEEE
to Massport

"We're Stronger Together."

May 27, 2001

John Silva
FAA – Airports Division
12 N.E.Executive Park
Burlington, MA 01803

Dear Mr. Silva:

I am respectfully submitting the Community Advisory Committee's consultants' report on the Logan Airside Improvements Planning Project and the FAA SDEIS and Massport's FEIR.

The Community Advisory Committee to Massport (CAC) officially represents twenty-seven communities impacted by Logan Airport's ground and air traffic pollution. By a majority vote the CAC does not support the proposed new runway 14/32 or the centerfield taxiway. We ask that you please weigh the severe environmental consequences of this outdated project and find the document inadequate, with insufficient analysis of alternatives, faulty data assumptions and the unnecessary expenditure of irretrievable resources.

Sincerely,

Anastasia Lyman, Co-Chair

MAY 31 2001

Comments of the Massport Logan Community Advisory Committee (CAC)

Report of the Consultants to the CAC

prepared on
May 23, 2001

on the
Logan
Airside Improvements Planning Project

and the

FAA Supplemental Draft Environmental Impact Statement (SDEIS)
and
Massport Final Environmental Impact Report EOEA #10458 (FEIR)
dated March 2001

Table of Contents

Description	Section Reference
Summary of Major Issues	CAC Comment Highlights
Overview of Comments	Overview
Chapter 1 – Project Background, Purpose and Need	Chapter 1
Chapter 2 – Logan's Role in the Regional Transportation System	Chapter 2
Chapter 3 – Alternatives	Chapter 3
Chapter 4 – Delay Analysis	Chapter 4
Chapter 5 – Affected Environment	Chapter 5
Chapter 6 – Environmental Consequences	Chapter 6
Chapter 7 - Cumulative Impacts	Chapter 7
Chapter 8 – Preferred Alternative and Mitigation	Chapter 8
Draft Section 61 Findings	Section 61 Findings
Responses in the SDEIS/FEIR to Comments on the DEIS/DEIR	Response to Comments
Request to FAA for Additional Analysis as part of FAA's SDEIS Panel Process	Requests for Add'l Analysis
White Paper on Regional Jets & Boston Logan International Airport	Pages 1 - 14

Summary of Major Issues

The Consultants to the Massport Logan Community Advisory committee (CAC) have prepared detailed comments on the FAA Supplemental Draft Environmental Impact Statement (SDEIS) and the Massport Final Environmental Impact Report EOEA #10458 (FEIR) prepared by Massport for the Airside Improvement Project dated March 2001. Comments enclosed in "Report of the Consultants to the CAC" prepared on May 23, 2001 generally addressed the following areas:

- Detailed comments on the eight (8) chapters of the SDEIS/FEIR document,
- Comments on the draft Section 61 Findings and identification of additional mitigation measures that should be implemented,
- Massport's response to the Secretary's comments on the DEIS/DEIR
- Massport's response to the CAC's comments on the DEIS/DEIR,
- Document the supplemental analysis requested by the CAC during the FAA panel process, and
- Development of a "white paper" on the regional jet issue at Logan

Based on the development of detailed comments on the eight chapters in the SDEIS/FEIR document, the following are the "Top Five Issues" noted in the following comments on SDEIS/FEIR Document:

Top Five Issues

1. Cumulative Community Impacts
   - Total operations by jet aircraft will increase substantially over time.
   - Night operations will also increase substantially over time.
   - Therefore, both noise and air pollution impacts will increase significantly over the next decade.
   - Noise impacts will be increased in East Boston, Chelsea and other communities to the northwest, and in South Boston and the rest of the "Runway 27" communities.

2. Utility and Effectiveness of the Proposed Project
   - Massport has not updated their near term and long term operations scenarios to integrate the regional jets into the fleet mix.
   - Since Massport has not properly reflected the range of probable fleet forecasts for short and long term, then the modeling presented in the SDEIS/FEIR does not accurately reflect the environmental and operational impacts of the Airside Improvement Project.

- The majority of the regional jets would prefer to use a runway longer than 5,000 feet, so Massport has likely overestimated the use of proposed Runway 14-32 by the regional jets in their modeling.
- The unanticipated growth of operations by "Regional Jets", supplanting non-jet commuter turbojet operations, means that the utilization of RW 32 for landings will be significantly lower that projected in the SDEIS/DEIR.
- The shifting of operations from the existing 3-runway combinations will be considerably less than projected. This will mean that the amount of reductions in delay projected by Massport will not be realized.
- It will also mean that shifting of operations to "over water" paths will be minimized, and projected noise benefits of the project will not be attained.

3. Lack of Demand Management Measures
   - With or without the project, future delays will be much greater than is currently the case, even if the delay reduction benefits of the project were realized.
   - The SDEIS/FEIR relies primarily on Peak Period Pricing as a demand management tool, but proposes to defer implementation until the situation becomes much worse.
   - Peak Period Pricing using $150 fee has been demonstrated in the SDEIS/FEIR to be ineffective under the most likely future fleet (37.5M Passenger High RJ Fleet). Massport has not proposed an alternative demand management scenario.
   - Therefore, additional demand management measures and revisions to the Peak Period Pricing program are required to prevent a completely unacceptable delay situation.

4. Need for Regional Solutions
   - Neither Logan nor the other airports serving the eastern Massachusetts area can be further expanded. Logan is currently in an over-capacity situation that can only worsen as operations increase.
   - The current demand and the growth in demand for transportation in the region must be met in one or more of three ways: Shift demand to non-air travel alternatives; reduce overall demand by demand management techniques; construct a second major airport.

5. Failure to provide for effective mitigation of cumulative community impacts
   - There is no program for limiting or reducing the numbers of night operations, which have the most serious noise impacts.
   - The suggestions for enhancing the soundproofing system do not address the problem of sleep disturbance.
   - Massport proposes no comprehensive health study in the bordering communities.

Comments of the
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Overview

Although no one could reasonably have foreseen this when the first little airstrip was built in East Boston, the fundamental problem is that Logan Airport is badly sited from almost any perspective. It can't expand laterally because communities and water hem it in. It's cut off from Boston proper by water, requiring tunnel connections. The mass transit tunnel is inadequate. Most of the time it's not feasible to direct aircraft so that they don't overfly people. The most serious mistake occurred more recently, however. When State government decided against the creation of a second airport at Fort Devens, the dye for the current and future problems was cast. The simple statement of the problem is that Logan is not and never will be big enough to accomplish what its managers and users ask of it. Whether the aspect under consideration is ground access, noise and pollution, parking, or flight delays to name only a few, the only action that affords real promise of easing the manifold problems at Logan is reduction in use - in passengers, ground vehicles, and aircraft operations. 18.1

The FAA and Massport seek to have the proposed Airside Improvement Project considered as a limited project addressing only airside delays and reduction of such delay through the implementation of one or more of the alternatives considered. It is explicitly accepted that the Airside Improvement Project does not address all causes of delay and can reduce only a portion of those delays. The majority of runway-related delays at Logan occur in Instrument Flight Rules (IFR) conditions. The annual delays during IFR conditions are modeled and projected by Massport to be 95,000 hours or 70% of modeled total delay hours in 1993, and (with the preferred alternative in place) 68,000 hours or 18.2

57% of modeled total delay hours in 1998, and from 90 to 180 thousand hours or 75-85% of modeled total delay hours in the future depending on the scenario selected. Further, the proponents seek to limit consideration of adverse impacts to only those directly associated with the Airside Improvement Project proposal. These limitations on the scope of the EIS/EIR should be rejected. 18.2

The discussion, and the proponents, should address all causes of delay to passengers using Logan. The discussion, and the proponents, should address all the adverse impacts on the communities surrounding Logan of all the activities associated with the airport. This is the last major airfield expansion project possible. Therefore, this is probably the last significant opportunity for the communities and the public to benefit from a comprehensive review of all impacts and issues, and to address changes and programs to alter and mitigate impacts.

Whether or not it is eventually decided the Airside Improvement Project provides net transportation, community and environmental benefits, broader issues should be considered and addressed at this time. It is undeniable that operations at and activities associated with Logan Airport have resulted and continue to result in significant to severe adverse impacts to the communities and to the environments around the airport and under its flight paths. It is also beyond argument that a large number of passengers are sometimes inconvenienced, some severely, through operational delays at Logan, by ground traffic congestion, by air transport system delays not linked to Logan directly (e.g., the extent to which recent NATIONAL delays have been attributed to congestion at LaGuardia Airport). In some cases, effective measures to reduce delay will afford community and other environmental benefits as well. An illustration would be effective demand management resulting in an overall reduction in operations, and thus in noise and air contaminant emissions. In other cases, effective measures to reduce delay will not afford community or other environmental benefits or will increase dis-benefits. An illustration would be a demand management measure that shifted operations to the earlier morning and later evening hours, increasing noise impacts and not effecting any reduction in air emissions.

The proposed Airside Improvement Program is the last substantial expansion of the airfield and of its physical capacity to handle aircraft that can be expected, ever. Whether or not passenger growth will grow significantly or to Massport's projections, without the intervention of demand management it is certain that growth will occur, delays will worsen, and the communities surrounding the airport will experience yet more noise and pollution. Thus, it is also the last chance for meaningful mitigation to be formally considered, addressed, and agreed upon by Massport. 18.3

Therefore, the imperative and the challenge to the FAA and Massport are to manage transportation demand. The approach must be on a regional basis at the least. This does 18.4

not imply reducing overall demand for communication and for transportation of people and materials. This means to shift demand to the least-impacting means and methods of adequately addressing it and to the locations of lesser impact and greater capacity. It may well mean the creation of new capacity in new locations and/or in different form. It means addressing the transportation/communication systems in the light of energy sufficiency, global warming concerns, and other widespread, pervasive long-term concerns about public and environmental health and habitat. 18.4

On a narrower basis, it is beyond time to initiate new measures or strengthen existing measures to address and reduce adverse impacts of Logan operations on its neighbors. There should be a commitment, specific goals, a plan and a schedule for accomplishing this. Noise impacts, air quality including odors, accessibility, and encroachment into communities should be the primary foci. Resource commitments for both planning and implementation must be made at the outset. Effective, meaningful community participation must be ensured. Oversight on a sustained basis by entities such as EPA, EOEA, and the courts should be established.

These efforts are beyond the mandates of either the FAA or of Massport, but they are the decision makers/proponents of the Airside Improvement Project and managers of major elements in the regional communication/transportation system. They must continue and extend their work with regional and national bodies and interests to bring about these outcomes, and the further consideration of the Airside Improvement Project should be dependent on initial successes and sustained commitments in the broader field of concerns. 18.4

The principal argument advanced for this project is to reduce operational delays during weather conditions that require the sole use of RW 15R/33L for both takeoffs and landings. According to the NE/SW Winds Case Study (DEIS/R, App. I, Table 1), such conditions (strong Northwest (NW) winds, primarily) occur on average about 10 days per year or about 2 % of the time. By itself, this is weak justification for the project. By focussing on delays during Visual Flight Rules (VFR) conditions and during these limited periods of strong NW winds, Massport obscures and fails to address the overall problem. 18.5

There are further questions concerning the suitability of the proposed RW 14/32 for its stated intended use. As airlines switch from turboprop aircraft to "regional jets", fewer aircraft will be able to use the 5000-foot runway. And while Massport claims that RW 14/32 would allow separation of all smaller planes from the RW 33L/27 configuration, it is reported that Cape Air has argued its aircraft, Cessna 402s, can and do use "short" RW 33R under high NW wind conditions, and could continue to do so even with the availability of RW 14/32. This suggests small planes can now be segregated from the remainder of the arrival/departure streams during those conditions, without the Airside Improvement Projects. The delay analysis should factor in that capability. The same 18.6

study indicates that wind conditions requiring the use of RW 33 with RW 27 occur on average only about an additional 29 days per year, or about 8% of the time.

Passenger growth appears to be leveling off, generally consistent with national trends. (A recent report (Boston Globe, 11/5/00) indicates the New England regional economy is growing at a slower rate than the national average, as well.) This suggests that congestion should grow only slowly if at all. However, it is correctly argued that delay and congestion are the result of numbers of operations, not numbers of passengers. Massport projections show future passenger and operational demand far beyond the rational capacity of Logan and the systems serving Logan to accommodate in a reasonable manner, and the FAA accepts those projections! It is further argued that neither the FAA nor Massport can exercise control over airline's scheduling or selection of aircraft types. This pessimistic "head in the sand" view of the future and of the role and authority of an airport operator/land and facilities owner has recently been challenged by the Port of New York/New Jersey Authority and by the operator of the San Francisco International Airport. In San Francisco, United Airline has responded by rescheduling and redirecting flights. At LaGuardia International Airport in New York, the Port of New York/New Jersey Authority has unilaterally established a cap on total operations, which the FAA has declined to overturn. At other major airports, operators are reportedly voluntarily taking actions to reduce peak period congestion. The NEPA/MEPA process requires the FAA and Massport to address alternatives to the proposed project; clearly carrier discussions should be an alternative that is considered. 18.7 18.8

Demand management measures generally have not been but must be postulated and analyzed in this EIS/R process. Specifically, measures to limit numbers of operations (beyond and different from the Peak Period Pricing option considered) and/or to affect the types, qualities and capacities of aircraft, and other measures to address current and projected impacts and concerns must be considered. Massport admits that peak period pricing is not effective in high regional jet scenario, yet they have failed to analyze other demand management alternatives. 18.9

The FAA and Massport present the proposed new RW 14/32 as "unidirectional", meaning that it would be used for departures only in the "14" direction, over water, and for arrivals only in the "32" direction, again over water. This is a critical "mitigation measure", intended to eliminate concerns of communities that might otherwise be overflown by arrivals in the "14" direction and departures in the "32" direction. However, unless steps are taken to ensure that both "15" and "14" departures are maintained over water until reaching 6,000 feet altitude, they should not be characterized as "over water"; and the plan for "32" arrivals shows more overflight of South Shore communities than is the case with "33" arrivals. Additionally, departure off of "14" are shown to turn inside the harbor and overfly close-in communities such as Dorchester, MaHapan, Jamaica Plain, Quincy, and Milton. The measures proposed to ensure that the 18.10

"unidirectional commitment" is permanent and will not be overturned, overridden or ignored are described in detail but are not ironclad, and the most effective of the suggested procedures required to institute or establish them are left for the future. The procedural and/or legal steps, measures or determinations, which would be required to reconsider and remove each of the proposed measures, should be presented. Only in this way may the communities judge for themselves the reliability and permanence of the assurances. 18.11

During the FAA Panel review process, confusion seems to have arisen concerning the prior CAC recommendation for review and complete restructuring of the PRAS system and goals, and its rejection of the current Preferential Runway Advisory System (PRAS) as constituting a basis for mitigation of impacts of the Airside Improvement Project. It is noted that the CAC has formally requested of the FAA that a new PRAS be undertaken as a formal environmental review under NEPA, with review by Massachusetts Executive Office of Environmental Affairs. (Including all three PRAS goals, percentage use of runway ends, dwell and persistence, in this discussion.)

There are three general issues regarding PRAS with which the FAA, Massport and the communities should be concerned and should address: 18.12

- The first is whether under conditions of increasing operations and congestion significant movement toward attainment of the current or any other PRAS goals is realistic, or whether in practice runway use combinations will be driven entirely or almost entirely by weather conditions during most of the principal operating hours. (MIT Aeronautics Professor Amadeo Odoni clearly stated his opinion, which is shared, that overall congestion and delay problems at Logan will worsen with time under any foreseeable circumstances.)

- A presentation of an analysis of probable runway use for the major configurations during other than nighttime hours, comparing Alternatives 1A, 2 and 4 for the 37.5 million passenger "High Regional Jet" fleet scenario is recommended. The fleet mix should incorporate the best information and projections available regarding growth of "Regional Jet" operations and aircraft use and reduction in commuter turboprop aircraft. The analysis should base runway selection on (1) weather conditions including wind direction and strength as well as IFR/VFR conditions, (2) capacity, and (3) availability (no selection criteria based on PRAS goals). The results should be presented in terms of annual numbers and percentages of overflights by runway end or grouped by affected area (see SH&E memo of 9/25/00 to "Logan Airside SDEIS Review Group", comment response #15); and be compared to PRAS goals. The probability 18.13

of exceedance of PRAS goals for dwell and persistence should be analyzed as well.

- The second issue is the continued reliance by FAA and Massport on PRAS goals established over 17 years ago by only eight (8) of the communities represented on the CAC (compared with 27 communities represented on the CAC), certainly under different conditions of aircraft types and performance and lower operations rates, and in some cases different operating procedures (e.g., RW 22 and 27 departure tracks). It remains unclear to us whether the data presented on growth and development within the affected communities is the best available data. Therefore, the question of whether meaningful changes have occurred in land use patterns and population densities or other demographics (e.g., ages of residents) should be reexamined. The existing PRAS goals did not take into account the presence of particularly sensitive land uses. 18.14

- The third issue, which is an issue in its own right as well as relevant to the selection of PRAS goals, is the selection and use of appropriate metrics for estimating and understanding the impacts of aircraft operations on the communities and individuals. There is a growing body of evidence and weighty opinion, including statements of residents about their concerns, indicating clearly that exposure estimates relying on DNL calculations, projections and contours are inadequate to reflect and understand community reaction. The reliance by the FAA and Massport on the 65dBDNL contour as representing the limit of adverse impact is not appropriate. The appropriate level of exposure based on that metric, representing an acceptable residential outdoor noise environment is 55dBDNL (EPA and WHO (1999)). This is not the sole metric that should be applied nor is "total energy exposure" the sole approach to understanding and representing impact that should be considered by decision makers. We concur with and support the recommendations of the Hanscom Field Noise Work Group Report of 9/22/99 with respect to metrics and monitoring, and urge incorporation of those recommendations into the assessment of impact and of changes in impact resulting from changes in either the airfield or operating procedures. (Our comments below on Section 6.2 offer more detailed recommendations for analysis of additional metrics.) 18.15

The FAA and Massport have elected to compare impacts of the changes in operations (runway use, flight tracks, increases in operations, changes in the fleet mix) through comparing projections only of Alternatives 1A ("Preferred alternative") and 4 ("No Build"). In order to present a fair comparison of the effectiveness of alternatives, the 18.16

SDEIS/FEIR should be expanded to include Alternative 2 ("All actions except RW 14/32", and including Peak Period Pricing) in all comparisons of effectiveness and impacts. Furthermore, each such comparison of future impacts and other changes should compare five scenarios; the 29 million passenger "Low Fleet" and "High Fleet" and the 37.5 million passenger "Low Fleet" "High RJ Fleet" and "High Fleet", with the most meaningful comparisons being those of the 29M Low Fleet and the 37.5M High RJ Fleet.

Additionally, Massport needs to revise its fleet operations forecast to properly reflect the integration of regional jets in all forecasts. The operations forecasts analyzed in the SDEIS/FEIR are inappropriate because proper regional jet statistics were not included in the forecasts.

Massport's proposed approach to demand management is too limited, too slow of development, would be initiated too late, and is too uncertain of implementation and of effect. "Peak period pricing" as proposed by Massport may not be the optimum demand management approach to reduction of delay and other demand management alternatives should be considered. Deferral of the development of a demand management approach and system until the need becomes apparent through monitoring, as Massport proposes, ensures that the conditions requiring its implementation will persist for years prior to any corrective action actually being taken. As we point out elsewhere in this section, the operations level suggested by Massport as requiring the initiation of the process is far too high to ensure any benefit as measured by delay reduction. At this time, the most appropriate demand management/delay reduction program concept should be established, the requisite actions defined, and all necessary measures put in place ready for implementation at the appropriate time. 18.17

Furthermore, the time to do that is now. The implementation of Alternative 3 would provide significant delay reduction benefits without construction of the proposed runway, and the demand management strategy can be put in place in relatively short order and adjusted as appropriate. It will clearly be required as the Regional Jet fleet and its operations increase. Adoption of Alternative 3 as the Preferred Alternative would provide a clear signal to the industry concerning its development of its future fleet, thereby enhancing economic efficiency and minimizing subsequent disruption. Should it prove insufficient, the construction of the runway could be reconsidered at that time. 18.18

Massport sees new high-capacity 3-runway combinations resulting from the construction of 14/32, thereby increasing average airfield capacity. The project is not capacity neutral. One such configuration would consist of landings on 27 and 32, and departures on 33L. Another would consist of landings on 32 and 33L, and departures on 27 and 33L. A third would be landings on 15R, with departures on 9, 14, and 15R. Thus with 14/32, the only Visual Flight Rules (VFR) conditions when a 3-runway combination would not be available would be strong NW or SE winds creating an excessive crosswind component 18.19

on 9/27. Under that condition a 2-runway combination would be available (actually, 2 major runways plus the short 15L/33R, used by small propeller AC). The new runway is clearly an increase in the average and minimum VFR capacities of Logan Airport, and should be discussed, described and evaluated as such.

The Flexible Airport Simulation Model (FLAPS) Capacity Analysis Results performed by Massport's consultant (FTA) in April '96 for the Airside Review Committee process are relevant to this matter. The FLAPS analysis was run for the "no-build" scenario, with 50% arrivals, for both the 1993 and (then-projected) 1999 fleets. It shows that only one runway use combination (4L/R arrivals, 4L/R and 9 departures) has a capacity of 120 operations per hour, and then only under the most favorable of Visual Flight Rule conditions (VAPS). Under slightly less favorable VFR conditions (BVFR), the capacity of that runway combination drops to 118 ops/hr, and decreases further to 68 ops/hr under the least favorable VFR conditions. It's important to note the capacity calculation assumes departures on 4L over Bayswater St., which is (effectively) embargoed for jets. In the first quarter of 2000, 16% of non-jet departures used that runway. Another runway use combination, 4L/R arrivals with 4R/9 departures (which is also a more representative configuration and capacity measure in a fleet with continually decreasing percentage of non-jet AC) has a VAPS capacity of 108 ops/hr, dropping to 107 under BVFR conditions. The 3rd highest combination, arrivals on 27 & 22L, departures on 22L/R, has a VAPS capacity of 103 ops/hr. The runway use combination of 33L/R arrivals, 33L & 27 departures, has a VAPS capacity of 77 ops/hr (note that 33R is used only for non-jet arrivals, and basically only by Cape Air and perhaps a few GA's). But, add RW 14/32, and the combination of 33L & 32 arrivals, 33L & 27 departures, under VAPS and BVFR conditions, increases to 107 ops/hr from 77, becoming the 2nd highest capacity runway configuration. Thus, the average maximum VAPS capacity of the airfield, based on an unweighted average of those 3 runway combinations (4/9, 22/27, and 33/32/27) would be 110 operations per hour under the "preferred alternative", construction of RW 14/32. The runway use combination of 33L/R arrivals, 33L departures (strong NW winds) has a VAPS capacity of 53 ops/hr. Adding RW 32 to the configuration 33L/R arrivals and 33L departures enhances the capacity of that combination only from 53 to 61 ops/hr under VAPS conditions.

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Runway utilization statistics unadjusted for nighttime operations are not available in the SDEIS. Recent runway utilization statistics distributed by the MPA Noise Abatement Office show that the highest capacity runway combination was utilized about 1/3 of the time, and the combination of arrivals on 27 and 22L with departures on 22L/R with a capacity of 103 ops/hr was also used about 1/3 of the time. The average maximum capacity of the remaining 10 significant runway combinations is 72 ops/hr, and those combinations are assumed to be used the remaining 1/3 of the time. On that basis the average VAPS (best VFR conditions) capacity of the airfield is currently about 98 operations per hour. That in our judgement is a much more appropriate estimate of peak

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hourly capacity of the airfield than the 120 ops/hr used in the SDEIS/FEIR, and the average capacity is significantly lower because operating conditions are less than the optimum VAPS condition a significant portion of the time. As we point out, while the SDEIS states the VFR capacity of the airfield is 120 ops/hr, that capacity is currently reached (a) only under the most optimum conditions, (b) on only one runway combination, and (c) on that runway combination only with a fleet having a high percentage of non-jet AC.

With the addition of RW 14/32, a runway combination of arrivals on RWs 33L, 32 and 27, with departures on 33L and/or 27, with a capacity under optimum conditions of 107 ops/hr, becomes available about 1/3 of the time. This increases the reliable capacity of the airfield under optimum VFR conditions from 98 to 110 operations per hour, an increase in capacity of over 10%. 18.23

We feel that constitutes capacity enhancement, which should require a further level of review. It is also relevant to the question of an appropriate "trigger" for implementation of a demand management procedure such as Peak Period Pricing, the purpose of which is to minimize operational delays caused by "overscheduling". The approach proposed by Massport is to set a "trigger" level of the 3-hour running average of scheduled operations equal to 110 ops/hour, and develop a Peak Period Pricing system with a "small community exemption" and a flat surcharge per operation during the peak periods. The first difficulty with that approach is setting the "trigger" at a level higher than the current average maximum capacity of the airfield and at the projected future maximum capacity of the airfield that would result from the "preferred alternative". No economic incentive or disincentive system can be 100% efficient, so the "trigger" must always be set lower than the goal. In this case, because of the "exemption" element of the Massport proposal, because the results of the approach cannot be reliably determined in advance, and because (admittedly, by Massport) the replacement of non-jet smaller commuter aircraft by "regional jets" less sensitive to a flat surcharge will lessen the impact of the fee, the "trigger" must be set significantly below the goal level by at least 10% initially. It remains to be seen whether and to what extent airline scheduling practices at Logan may be affected. The second difficulty is that Massport has chosen the number 110 operations per hour as that "trigger" level. We have shown, above, that with the current configuration of the airfield the reliable number of scheduled hourly operations above which delays will assuredly occur at least 1/3 of the time is under 100 operations per hour for the current airfield configuration. For that condition, the "trigger" should be set at no more than 90 ops/hr. If RW 14/32 were constructed, and used without wind restriction or other mitigating measure, the reliable average capacity of the airfield under optimum weather conditions would increase to about 110 operations per hour; and the "trigger" should be set at about 100 ops/hr. (With advances in instrumentation, such as the implementation of a GPS-based system, this capacity could potentially be attained under IFR conditions as well.) 18.24

The decision to conform and present the SDEIS/FEIR as a "companion piece" to the DEIS/R presents the reviewer with the challenge of continually checking back through the four volumes of the latter (assuming she or he still has or ever had them). This is not only tedious, it is often confusing, and can lead to misinterpretation of topics and presentations. Throughout the Report, the impacts of Alternatives 1, 1A, 2/3 and 4 should be directly compared, and where references to materials previously published is required or appropriate the materials should be clearly referenced. 18.25

The SDEIR/FEIR does a generally good job of presenting noise contours for the two cases that were selected for comparison, the Preferred Alternative (Alt. 1A) and the "No-Build" Alternative (Alt. 4). One exception is Fig. 6.2-9 that appears to contain an error, comparing the 1998 No Action DNL contours with the 29M Low Fleet Alternative 1A contours instead of the 29M Low Fleet No Action contours. However, the SDEIS/FEIR completely fails to present comparable information for the other three alternatives. The noise contours in the DEIS/R, which do provide information for all alternatives, are a much less clear presentation and are based on outdated information. It is not feasible to make side-by-side comparisons of all alternatives. While this serious shortcoming could be corrected in the subsequent FEIS, it is a major inadequacy of the FEIR, which for that reason alone should be found inadequate. 18.26 18.27

Chapter 1. Project Background, Purpose and Need

This chapter clearly shows the adverse impact on delays and congestion created by the high percentage of small "commuter/regional" turboprop aircraft, carrying less than 10% of passengers but resulting in over 40% of total operations. The immediate focus of delay reduction measures should be to substantially reduce this gross disparity in the use of the airspace. If only half of passengers on commuter flights are connecting to other Logan flights (Section 1.3.1), and airlines are actively increasing operations at other airports, an opportunity exists to divert commuter operations. In addition, measures to ensure that the future fleet mix remains consistent with the "low fleet" scenario should be presented and implemented. A new Origin and Destination study of passengers in these aircraft should be undertaken to better assess the potential for diversion of that traffic to other airports and other modes. 18.28

We continue to believe the need exists for a long-term and effective demand management strategy for Logan. The objective must be to maintain the airport over the long term as an accessible and reasonably efficient airport for PASSENGERS as well as for airlines, as well as restraining adverse community and environmental impacts below the thresholds that have been established. Massport models delay at about 120,000 hours in 2000 with 27 million passengers and about 480,000 operations, levels <u>below</u> those of the 29M Low Fleet forecast. **It is argued in the SDEIS/FEIR that the current level of delay is intolerable**. An economic analysis is presented suggesting that the (modeled) delay in 1998 of about 140,000 hours imposed a direct annual cost of about $300,000. A quick look at forecast modeled delay hours for future passenger volumes and fleets indicates **a much more delayed and** (based on Massport's analysis) **costly future**, <u>regardless</u> of foreseeable actions that may be taken within the physical confines of Logan Airport. Under the "preferred alternative", forecast delay hours increase from 50% to 300% in the out years, a bit less if Peak Period Pricing is incorporated into the forecasts. Noise and other environmental impacts will increase in the future to and beyond the levels projected for even the "no-action" alternative. Planning and actions must be initiated now to forestall that outcome. As such, a formal airport master plan for Logan, performed by almost all commercial service airports, should be required of Massport in order for the impacted communities to understand what Massport plans to do with this critical dilemma over the next 20 years. 18.29

<u>Section 1.1 Purpose and Need</u>

1. It is stated that the current level of delay results in $300 million in annual cost to airlines and air passengers. Whether or not this value is even close to correct, it is not relevant. Both airlines and passengers accept or tolerate these costs, as they do the costs of delay in highway traffic. They may grumble, but they keep doing the same thing. Further, there is no effort to contrast those "costs" to the costs borne by the residents of the communities impacted by Logan operations. Also, in this 18.30

case, every minute of modeled delay is being counted (including that of cancelled flights) rather than delays over some realistic threshold such as the 15 minute threshold used by the FAA

2. Since the "preferred alternative" of the Airside Improvement Project will not eliminate delay, the estimate should be of the cost avoided by the proposal. 18.31

Section 1.2 How Logan Operates

1. Fig. 1.2-2 (page 1-10) shows departures from RW 4L. The application of the Massport noise rules to departures on 4L and arrivals on 22R should be explained, including the method of measurement of the noise limit. The types of aircraft that can meet the landing and departure noise limits at this time should be indicated, for both near-term and long-term forecasts. (Note: This rule changed, from aircraft weight to noise limits.) 18.32

Section 1.2.2.1 Impact of Wind and Weather conditions on Airport Capacity

1. Fig. 1.2-8 shows NW winds occurring 37% of the time. Operational history at Logan indicates that the tower has consistently used runway combinations based on capacity and convenience. If the runway combination 32/33/27 were available, the tower should be expected to use that combination over 1/3 of the time based on wind direction. (The current PRAS departure goals are 18% for RW27, 12% for RW 33.) That has not been incorporated into the noise exposure forecasts. The added impact in East Boston, Chelsea, Revere, and the "Runway 27 corridor" would be substantial. 18.33

Section 1.2.2.2 Impact of Aircraft Mix on Airport Capacity

1. The discussion of jet vs. non-jet arrival streams should include discussion of impacts of developing regional jet aircraft operations, the requirements for separations between jets of various classes as well as between jets and non-jets should be presented, and the projected impacts on delay analyzed. 18.34
2. The FAA should revise or rescind its policy of "first come/first served", so that during periods of congestion, controllers could sort departing and perhaps arriving aircraft into small groups by size class in order to reduce the impact of taxiway and trail separation requirements and differing speeds on delay. This administrative action with national benefits at comparable airports could be implemented on a trial basis at Logan initially. The concept is as follows: When congestion exists on taxiways, the hour would be divided into 4-6 equal segments. During each segment, scheduled departures would be grouped by aircraft size or capacity, in decreasing order. Those aircraft in the first group would be cleared to push back and taxi, others would be held at gates. Then, successively, the remaining groups would be so cleared. 18.35

Section 1.3.1 Current Activity and Historic Trends

1. This section also discusses the trends in passengers and operations but does not substantiate how the projected growth in passengers can be accommodated with slower growth in operations. 18.36
2. The text infers that the observed slower growth in operations is due to a reduction in the regional carrier activity. If this is occurring as a result of consolidation of flights by use of large aircraft, then some of the projected benefits of Peak Period Pricing as proposed may not be realized. 18.37
3. One way to look at "Logan's problem" is to note that over this period there appears to have been no improvement in the efficiency of moving people by air. A comparison of load factors between commuters and carriers should be presented. 18.38
4. While all-cargo flights may have no impact on delay, their operation between the hours of 10 PM and 6 AM has a disproportionate community noise impact. The goal should be to reduce nighttime operations, the elimination of Stage 2 aircraft notwithstanding. As we have noted in previous comments, Logan eliminated night operations by Stage 2 aircraft earlier, independent of the proposed Airside Improvement Project.

Section 1.3.2 Forecast Aircraft Operations and Passenger Levels

1. In equating passenger demand and aircraft operations in future scenarios, the Report suggests that significant growth in numbers of passengers per operation is expected. Table 1.3-1 clearly shows the history at Logan of essentially no improvement over two decades in this statistic, with the number fluctuating almost randomly between 50 and 58, currently at 57. Thus the credibility of the forecast in Section 1.3.2 is questioned. Table 1.3-2 indicates 57 passengers per operation in the near term under the "low fleet" scenario. In the "long term", the projected passengers per operation is 62 ("high fleet" scenario). The bases for assuming (a) that load factors don't materially improve in the near term, and (b) that they will in the long term, are not substantiated, nor do they appear reasonable. Without further support, the projections should be revised based on a more conservative and rational load factor of about 60 passengers per operation. If Massport maintains its projections, the mechanisms it anticipates implementing to attain the goal should be presented and supported. Since the number of operations is linked to the number of passengers, then for a given passenger estimate (e.g., 37.5 million per year) a lower estimated load factor will result in a higher number of projected operations and thus more delay. 18.39

Section 1.3.3 Logan's Demand Profile

1. Fig. 1.3-2 presents a picture of a disturbing pattern. Over the 7-year period shown, nighttime operations have increased nearly as much as daytime operations have decreased. This is a trend that must be reversed, regardless of the elimination of 18.40

Stage 2 aircraft and of any decision about the Airside Improvement Project. However, the projection shows the trend to increasing nighttime operations continuing.

2. Please refer to our prior discussion about the statement of airfield hourly capacity.
3. The statement that "over scheduling is not a problem at Logan today" represents a very narrow and inappropriate view of what constitutes over scheduling. Airport congestion has already and continues to cause delays categorized by Massport and the FAA as grossly excessive-that's over scheduling! Scheduling operations at or near the ideal maximum airfield capacity, knowing that most of the time those conditions will not prevail and that when they do, the PRAS goals cannot be approached much less attained-that's over scheduling! 18.41
4. If in fact over scheduling is not currently a "problem" at Logan, this would be an excellent time to institute Peak Period Pricing. The operators would have a "no impact" period in which to develop responses to the procedure.
5. The selection of the preferred alternative does not make sense. The project was initiated in 1993 due to airline over scheduling. If airlines are not currently over scheduling now or in the future, the justification for the new runway is substantially reduced since wind conditions reducing Logan's operational throughput to less than 60 operations per hour occur only 10 days per year. The term "over scheduling" needs to be reshaped. The preferred alternative needs to include demand management techniques. 18.42

Section 1.4 Delays at Logan

1. Indicating that the delay hours of 120,000 computed delay hours is six times the FAA's congestion threshold of 20,000 hours is not accurate since the metrics by which the delay hours are computed is different.... This is a misleading statement. The comparisons must be "apples to apples". 18.43
2. Table 1.4-2 in Section 1.4.1 indicates that for almost all major airports, including Logan, the great majority of delay is of departures. Runway 14/32 has been urged as correcting a problem with arrival delays during NW winds (NW Wind Case Study). This should be reassessed. 18.44

Section 1.7.2 FAA Determinations

1. The Report cannot correctly be said to demonstrate:
    a. "the project is reasonably consistent with the existing plans of the public agencies for the development of the area"..... The FAA, the State of Massachusetts, nor the NE region has developed a system plan that can be implemented to address the aviation demand of Logan and the NE region. The FAA's current efforts to update the NE region system plan must address the capacity constraints at Logan. 18.45
    b. "fair consideration has been given to the interests of communities in or near the project location"...The communities do not support the build 18.46

alternatives and no specific mitigation (other than soundproofing and construction impact mitigation) has been proposed by the Proponents to mitigate the concerns of or the impacts on the communities.

c. Land use compatibility.... no proposals for zoning or land use changes in or around the airport are mentioned in this report, and there certainly widespread incompatibility at present. 18.47

d. "appropriate air and water quality requirements will be satisfied".... no procedures are identified nor are commitments made to monitor air and/or water quality wherever elements of the Airside Improvement Project may have impacts. Air quality impact, like noise, is a condition attributable to the existence, operation and use of Logan Airport. The cumulative impacts of the airport and its neighbors in the regions of concern must be addressed. These are areas where considering only the limited scope and the impacts of the Airside Improvement Project alone are insufficient and inappropriate, as we have stated elsewhere. 18.48

2. The FAA's 4(f) assessment should consider whether any parkland lying within the 65DNL contour under 1998 conditions is included based on year 2000 operations and aircraft (particularly the elimination of Stage 2 AC), and if so, whether under the Airside Improvement Project it would be re-included. 18.49

3. The Airport Layout Plan (ALP) approval should consider cumulative air emission impacts and the growth implications of the Airside Improvement Project as discussed above. 18.50

Chapter 2. Logan's Role in the Regional Transportation System

Overview

This chapter discusses an increased role of regional airports in absorbing growth in demand for air transportation. It is asserted by Massport that a combination of factors, including congestion and delay at Logan, difficult ground access to Logan, promotion of the regional airports, and introduction of frequent low-fare service to a number of markets from those airports, have combined to result in a significant shift of passenger growth to the regional airports (principally Manchester, NH and T. F. Green in Warwick, RI). 18.51

The data presented in the SDEIS/FEIR supports a quite different conclusion. Overall growth in passenger demand at Logan over the past decade has been about 2.7% per year. Massport projects a growth in passenger demand at Logan of about 2.6% per year from 2000 to about 2015, a continuation of the trend of the past decade with no appreciable impact of "regionalization". Passenger demand growth at Logan was at a slightly higher average rate, 3% per year, during the first part of the decade, from 1990-1996, prior to the onset of enhancement of service at Manchester and Green. (Included in that average is the effect of a slight drop in total passengers during 1995.) Had the trend of the first half of the decade continued from 1995 through 2000 Logan passenger demand would have been about 28 million last year, instead of the actual 27.4 million. The growth in passenger demand continues unabated at Logan despite the existence and promotion of the regional airports. While there is no question that Logan's ***share*** of regional passenger volume has declined in recent years, to attribute that decline to a shift in passenger selection of airport away from Logan is questionable. We believe the observed decline in Logan's share of regional passenger volume is more likely attributable to stimulation of overall demand by the introduction of frequent, low-fare service at Green and Manchester Airports especially. Our hypothesis is that air passenger volume on a regional basis has grown faster than otherwise it would have due to creation of an attractive service. Passengers have shifted from automobile travel and have undertaken discretionary travel, travel that would not otherwise have occurred. Logan has generally retained its "market". 18.52

There are several significant points associated with our hypothesis. Efforts to shift demand away from Logan to regional airports are less effective than postulated by Massport. If carriers with service at alternate airports raise ticket prices or decrease service levels, it is likely to initially impact discretionary air travel rather than increase passenger demand at Logan. However, if carriers at Logan decide to compete with regional airport carriers on price and/or service levels, that competition is likely to result in a shift of demand to Logan from the regional airports. 18.53

This alternative interpretation of available data indicates the need to better and more fully understand the dynamics of the situation, in order that attainment of the professed objective of decreasing demand pressure on Logan may be better assured. It is clear to us that effective demand management techniques must be devised and implemented in order to preclude over-saturation of Logan. Only with a comprehensive and correct grasp of the situation dynamics can such a system be devised and tested.

Growth of passenger demand for travel between Boston and New York by high-speed rail is more clearly a case of direct competition for existing demand rather than stimulus of latent demand, although there may be some of that as well. In a particular market, when one form of transportation service is perceived by users to be more attractive overall, that service should succeed. In this case, "attractiveness" includes door-to-door travel time, number and convenience of intermodal transfers, cost, comfort and amenities, opportunity to make productive use of travel time, and perception of safety. Individual clients of course weight these factors differently and arrive at different conclusions. Since the newly established high speed Boston-New York rail system has considerable unused capacity, substantial and sustained efforts to ensure its selection over air travel is justified to reduce congestion at Logan attributable to short-haul movements. In statements made at the public hearing for the SDEIS/FEIR, the Head of the Amtrak Board, former Governor Dukakis, testified that Massport has underestimated the number of Logan passengers who will opt for the ACELA. 18.54

The purpose of this section of comments is not to be critical of current and recent past efforts by Massport to encourage use of alternatives to "flying Logan". As has been acknowledged by numerous reviewers, those efforts are in the forefront nationally of innovative attempts to address congestion at a specific airport, and Massport and its staff are to be congratulated for them. But all elements of the regional transportation system must recognize that congestion and delay at high levels will continue and worsen in the absence of effective demand management, and must continue to develop, implement and strengthen innovative approaches to that reality.

Massport states its intention is to shift Logan activities "to the long-haul and international market" (Juves, 4/7/01). In 1999 (1999 ESPR) about 10% of all departures from Logan by scheduled carrier services were for non-stop flights in excess of 1500 miles. (Another 5% of such departures were to Canadian cities closer then 1500 miles.) "Regional Jet" aircraft operation, serving markets within 1000 miles or less of Logan, is the fastest-growing activity segment at Logan. Operational, environmental, and public tolerance limitations at the existing regional airports have yet to be defined and tested, and therefore their long-term capacity for acceptance of traffic diverted from Logan has yet to be determined. While Logan will remain the dominant long-haul airport in the region, the heavy preponderance of its passengers will be in the short- to medium-haul markets. 18.55

A corollary is that not enough long haul/international traffic exists to alone support a new major airport, were there a plan to establish one. But if the emerging class of New Large Aircraft dominates that market segment, Logan will be hard-pressed to make the necessary physical changes to serve those aircraft. It has proven useless to argue in this forum for the need to reconsider the decision to not undertake development of a "second major airport" in eastern Massachusetts. The *New England Airports System Study* will, it is hoped, revisit that question as well as the potential role of Pease in the long-haul/international market. 18.56

While "general aviation" operations are a relatively small fraction of total operations at Logan, and are even less significant in terms of passengers transported, these operations are increasing and there has been no serious analysis of: 18.57

(a) the impact of G/A operations on delays during congested periods or
(b) the possibilities of redirecting that traffic. It would seem in the absence of contradictory information that per operation the impact of a G/A aircraft on airfield operations would be comparable to that of non-jet passenger aircraft (e.g., "commuter airlines"). On a "per passenger" basis the impact on delay of G/A aircraft might be greater than of any other category of aircraft! At least one other airport has in effect banned G/A operations by establishing a minimum seat capacity for access to the airfield.

We believe the data presented on the growth of passenger volume at the principal regional airports, T.F. Green (Providence) and Manchester, NH, suggests that a significant portion of that growth may be stimulated by low fares and service, rather than diverted from Logan. This topic deserves further analysis, since diversion of "Logan passengers" to the regional airports is a major thrust of Massport's "demand management" program. The stimuli to diversion to the regional airports are comparatively lower fares, easier and quicker access, provision of direct flights in lieu of connections, and readier and less expensive parking, which can be effective if the service levels are adequate. The absence of connecting flights, and limited range of and markets served by direct flights, will mitigate against the success of both the regional airports and Massport's objectives. We think this topic deserves very serious consideration in the *New England Airports System Study*. 18.58

Section 2.5 Impact of Regional Alternatives on Logan Airport Demand

Massport indicates it has lowered its passenger growth projections, but has not reflected the developing regional jet or cargo operations activities in their forecasts.

Section 2.6 Role of Other New England Commercial Airports

Regional transportation/communication planning should be of the highest priority. It should be undertaken and overseen by a truly regional entity not biased toward or by proponents of any one element of the system. The resources of the leading universities of 18.59

the region should be tapped to ensure a broad, forward-thinking approach to the problem. As Prof. Odoni pointed out and as we have consistently argued, the Airside Improvements Project is a band-aid approach without perceivable long-term impacts on a major problem that cannot be ignored.

With some brief comments regarding Pease International Tradeport, Massport does not identify airports, such as New Bedford, that could develop cargo operations to shift this activity away from Logan. 18.60

Section 2.7 Other High-Speed Intercity Travel Options

As indicated in the general comments, regional transportation/communication planning should be of the highest priority. It should be undertaken and overseen by a truly regional entity not biased toward or by proponents of any one element of the system. Again, the resources of the leading universities of the region should be tapped to ensure a broad, forward-thinking approach to the problem. In this light, the scope and commitments of the *New England Airports System Study* are not sufficiently comprehensive.

Section 2.7.1 Rail Service

The reported development of and plans for enhanced rail service are encouraging. This mode of transportation needs and deserves a high level of public support. There should be continuing and comprehensive oversight of management and progress in this area, with aggressive promotion and improvement of the services and connections provided. The Boston-New York Amtrak high-speed service (ACELA Express) is by far the most important in creating a viable alternative to air travel in that corridor. It is operational, so its effectiveness can now be tracked. Upgrading and improving that service should be a very high priority, and the requisite increments should be relatively economical.

Rail has great capacity and capability in center-to-center movement, and can demonstrably compete on a total travel time basis with air travel in that market. It offers comparable origin-destination movement with fewer transfers and thus greater convenience. Rail can for comparable cost provide substantially greater amenities to travelers due to lesser space constraint in its vehicles. Rail operations are less affected by weather than any other mode of travel. The disadvantages of rail must also be recognized. Build-up of patronage for new service is likely to be slow. It should not be promoted for roles to which it is not well suited; e.g., for routes where bus transport is more appropriate. New routes requiring new rights of way are extremely difficult and costly to establish, but so are new or substantially expanded airports. Air carriers can be more flexible, and respond more rapidly, to changing market conditions or needs. Except for niche markets, rail cannot compete effectively with air transport in the medium and long-haul markets.

Section 2.8 Ground Access Improvements

It does not appear from the text that Massport has adequately and properly addressed the requirement of the Certificate of the Secretary on the DEIR to "...quantify the effects of these measures..." (*ground access improvements to all four airports...*). To be useful in assessing any enhancement of the regional airports as alternatives to Logan, this quantification must show in what ways, and to what extent, the contemplated improvements will overcome existing and potential future constraints on access to these airports. 18.61

Section 2.9 Initiatives in Support of Regional Transportation Options

As stated elsewhere in these comments, Massport deserves recognition for its efforts to regionalize the air travel system in southeastern New England. Without intending criticism, those efforts must necessarily fall short of ensuring over the long term that the area is served by an efficient system that also minimizes energy consumption and adverse environmental and human impacts. Further, the *New England Airports System Study* is inadequate in scope and involvement to reach that goal.

In comments on Section 4.5, we discuss a recommendation that assumes as a primary objective the reduction of total aircraft operations during peak operating hours so as to reduce operational delays during such periods, and would be an alternative to Peak Period Pricing. A unit-price surcharge based on seat capacity could be imposed on all operations (landings and departures) on all aircraft operations at Logan during peak periods. This surcharge would be applied to all passenger seats on the aircraft (including crew seats allowed to be used for passenger seating), based on an "a priori" minimum of at least 3 passenger seats per aircraft. Please refer to that section for a fuller description of and arguments for the recommendation.

Table 2.9-1 "Investments in the Region's Airports" is incomplete by virtue of failure to include investments made at or associated with Logan, for comparison. 18.62

The *New England Airports System Study* as scoped does not appear broad enough to address the inadequacies and problems of the New England transportation system. The proposed study is primarily focused on expanding air travel capacity, and the management system for the study is inherently biased in that direction. Therefore the study is unlikely to produce useful or acceptable recommendations. 18.63

Section 2.10 Conclusion

We take strong exception to the concluding paragraph of this section. Regionalization and RW 14/32 are not the only answers to NW wind delays. Demand management techniques and substantial reduction of small plane traffic at Logan could materially ease delay during such periods, which are quite limited in any event. 18.64

Chapter 3. Alternatives

Section 3.2 Unidirectional Runway 14/32

1. Additional detail should be provided documenting how the proposed uni-directional runway would be required to remain as such. (Cite examples from other airports, indicate legal requirements, etc.) 18.65
2. Provide a comparison analysis of delay reduction if only the south half of the centerfield taxiways was developed. 18.66

Section 3.2.1 Runway Length Screening

1. Massport states "based on discussions with airlines and airports and the FAA consultant's analysis included in Appendix C, most of the regional jet types forecast to use Logan in the future are capable of landing on a 5,000 ft runway." This statement is untrue. Appendix C indicates that CRJs and ERJ in wet conditions will not use the runway. Massport also provides a sensitivity analyses that specifically identifies which RJs will and will not use the runway. CRJs make up a substantial amount of existing and future RJ fleets. FAA's consultant states the analysis should not assume that CRJs would use a 5,000-foot runway for landing. Based on conversations with air traffic control tower personnel conducting air traffic operations at Philadelphia International Airport (which has both a 5,500 ft and 5,000 ft. runway), Ronald Reagan National Airport (which has a 4,911 ft. runway), and Norfolk International Airport (which has a 4,876 ft. runway), pilots of regional jet (RJ) aircraft prefer to use longer runways rather than the offered 5,000 ft. (+/-) runway. Massport needs to reevaluate the Runway Length Screening section to reflect the information provide in Appendix C and in Chapter 4 in the RJ Sensitivity Analysis. 18.67
2. Provide letters from a majority of the airlines operating at Logan indicating they intend to use a 5,000-foot runway at Logan for their regional jet fleets. This comment recognizes that while the FAA may authorize, and manufacturers may state, the airlines and their pilots make the final decisions in operating the aircraft. 18.68

Section 3.2.2 Layout Options

1. Provide an indication of the types of aircraft that are represented by ARC C-III. 18.69
2. What are the proposed (initial and future) approach visibilities for the proposed Runway? 18.70
3. Explain if there are any requirements for approach landing systems, either initially or projected in the future. If so, what type(s), where located, and how installed? These facilities should be included in the SDEIS/FEIR 18.71

Section 3.2.2.3 Runway Layout Options

1. Layout Option C is recommended for the runway alignment; however, it does not meet FAA criteria for Runway Safety Areas. FAA is currently emphasizing protection of 18.72

safety areas and object free areas. Does FAA intend to give a deviation to standard (If the SDEIS is FAA's document - shouldn't they rule on this now?)?

2. If the FAA does not provide a modification, discuss the effects to usage of the runway, if a deviation is not permitted. Additionally, would the FAA give deviations to FAR Part 77 and taxiway object free area penetrations standards for Runway 14? 18.73

Section 3.2.2.4 Assessment of Technical and Environmental Issues

1. Provide development cost estimates for Options A, B, and C including costs of replacing aircraft parking locations, and for removing the Hyatt hotel parking (option A). 18.74
2. Identify the location of the water on the figures illustrating Options A, B, and C. 18.75
3. Discuss where the eliminated parking positions shown in Figures 3.2-2, 3.2-3, and 3.2-4 are to be replaced. 18.76
4. For Option C, identify if the Hyatt Hotel penetrates the FAR Part 77 surfaces for missed approaches. Is there the required FAR Part 77 clearance over a public road for missed approaches? 18.77
5. Were it determined that the 5000 foot RW 14/32 would have significantly less delay reduction benefits than postulated as a result of the activities of regional jets, in what ways would the proponents recommend revising the Airside Improvement Project? 18.78
6. Clarification is requested of the statement that RW 32 might serve "larger aircraft" under " ideal conditions". What aircraft, what conditions, and how many operations? 18.79

Page 3-27, Option C

1. Refers to cost being one of the factors in considering a determination (modification of FAA standards); however, no comparison of costs are offered for review and evaluation. 18.80
2. A referenced factor identified in considering the modification of standards is "the types of aircraft reasonably expected to operate on the runway"; this safety consideration does not appear justified based on the discussion of the DELAYSIM model and the fleet mix that could use a 5,000 ft. runway. Massport should explain their rationale for the requested modification. 18.81

Section 3.3.1 Centerfield Taxiway

1. Additional detail should be provided documenting how the proposed centerfield taxiway could be monitored to ensure that air quality and water quality standards north of Runway 33L would not be adversely affected from development of a centerfield taxiway system. 18.82
2. Figures 3.3-1 through 3.3-4 should also depict the proximate adjacent residential communities impacted by taxiing operations. 18.83
3. Wouldn't the centerfield taxiway lead to or require taxiing aircraft intending to depart on RW22L or having landed on either that runway or on 4R to cross active RW 4L/22R somewhere other than at its ends? Wouldn't that create or increase a safety risk? 18.84

4. Can gate hold procedures be used and required to avoid excessive queuing on the centerfield taxiway and TW N? Massport should address why this alternative was not considered as one of the alternatives in the Airside Improvement Project. 18.85
5. If a successful aircraft operations restraint/demand management program held operations at or below the threshold of "significant delay", would taxiway congestion continue to be a problem at Logan? 18.86

Section 3.4 Reduced Approach Minimums for Runways 15R, 22L, 27, and 33L

1. The effect of "Reduced Approach Minimums" in encouraging additional landing attempts under reduced visibility or ceiling height on runways for which the reductions are proposed has not been enumerated. The potentially affected and concerned communities include East Boston, Chelsea, Charlestown, Somerville and Everett for 15R landings; East Boston, Revere and Swampscott for 22R landings; Winthrop for 27 landings; and Hull, Hingham and Weymouth for 33L landings. These communities should have clear and complete knowledge of how many additional bad-weather approaches will be initiated affecting them, and how many are likely to proceed to below the current approach minimums; under the range of operational numbers presented in the Report. 18.87
2. For Revere and Chelsea especially, the actual minimum vertical clearance of aircraft approaching and remaining within the glide slope tolerance, taking account of actual ground elevation, should be displayed. 18.88
3. While the proponents seem to have effectively addressed the concern in many minds of aircraft flying lower over communities on approach, greater noise impact associated with the effects of cloud/fog on sound propagation and risk to those on the ground remain of concern. The latter may be associated with overhead passage of unseen aircraft, and it may arise from recognition that aircraft could be initiating a "missed approach" or "aborted landing" procedure at a lower altitude than is currently the case. In any event, serious consideration should be given to withdrawing the proposal since it offers only minimal relief from delay (less than 3%), and increases the hours of airport availability by about one-tenth of one percent. 18.89

Section 3.5 Peak Period Pricing

1. Massport should justify why it would only choose a demand management strategy that is excluded from review under FAR Part 161. The purpose of FAR Part 161 is to allow local airports an ability to restrict operations for Stage 3 aircraft. If this is required to implement specific demand management strategies at Logan, then Massport should conduct a FAR Part 161 on the proposal. If Massport is committed to demand management as it has stated throughout the DEIS/SDEIS/FEIR, then it should explore all options, not just peak period pricing because of the exclusion to FAR Part 161. 18.90
2. Massport should comment on the effectiveness of peak period pricing for the 37.5M High RJ Fleet. Chapter 4 addresses that peak period pricing is not effective for a high RJ 18.91

fleet, thus, based on existing RJ activity at Logan (March 2001) and the obvious future increases in RJs for airlines serving Logan (see comments in Chapter 4), the demand management scenario is not useful as an option.

3. This section should include a broader vision of demand management techniques, of which peak period pricing is one option or could be one element. Peak period pricing was introduced as a demand management technique, which according to Massport's analysis can be used to reduce delays during periods of airline over scheduling. The Massport proposal should be refined and enhanced through the following measures: 18.92
   a) Lowering peaking threshold for determining congestion (show how selecting 100 ops/hour and 90 ops/hour compares with the selected 110 ops/hour in terms of delay reduction)
   b) Establish a peak period pricing analysis based on aircraft seat capacity. How might this affect delay?
   c) Put into place the peak period pricing or other demand management structure with a threshold "trigger" (causing the program to be instituted once the threshold is reached) instead of developing a program to identify when the trigger might be reached.

   Also, Massport should immediately implement a demand management technique as a deterrent to predictable forecasted congestion, instead of waiting for a hypothetical "trigger" to be reached.
4. There are additional delay and demand management techniques that should be introduced in the SDEIS/FEIR, including: 18.93
   a) Consider FAA management for takeoff control that attempts to limit the impacts of conflicts between large and smaller aircraft (speed, turbulence, maneuverability) such as grouping takeoffs into similar size/type sets. What delay reduction is realized? If such a procedure were determined to be feasible and beneficial with respect to demand management, then changes in community noise impacts should also be examined.
   b) In lieu of Peak Period Pricing, consider and evaluate a system of flat pricing (charge per operation, rather than charge by weight) with differentials for daytime, early morning and evening, and nighttime operations; and possibly with a "small communities exemption". 18.94

Chapter 4. Delay Analysis

Section 4.2.1 Historic Conditions

1. Why limit the analysis of the 1998 conditions to the Preferred Alternative, why not include information about alternatives 1, 2, and 3 (not just preferred alternative and no action alternative). 18.95

Section 4.2.2.1 Slower Passenger Growth

1. While air service has expanded in the regional New England market, the introduction of Southwest Airlines (and other low cost carriers) typically induces additional demand for air services. Thus, the fact that total activity has increased in the regional markets reflects some shift in travel patterns but also additional people traveling.

Section 4.2.2. Rapid Growth in Regional Jets

1) This is a significant trend that substantially affects the need and justification of Runway 14/32. Substantial additional detail should be provided on this trend and its integration into the Logan market. At a minimum, information should include: 18.96
   a. Documentation of regional jet operations and type of aircraft in current Logan market (1998, 2000). Based on April 2001 Official Airline Guide, American, Delta, USAir, United, America West, Air Canada, Midway, Northwest, and Continental are currently operating regional jets at Logan. Moreover, per April 2001 Official Airline Guide (see attached OAG summary):

      1. American has at least 22 flights per day using ERJs,
      2. Delta has at least 26 flights per day using DRJs
      3. Delta has at least 4 flights per day using CRJs
      4. USAir has at least 13 flights per day using ERJs
      5. United has at least 2 flights per day using CRJs
      6. America West has at least 5 flights per day using CRJs
      7. Air Canada has at least 5 flights per day using CRJs
      8. Midway has at least 1 flight per day using CRJ
      9. Northwest has at least 1 flight per week using ERJs
      10. Continental has at least 1 flight per week using ERJs

      The SDEIS/FEIR does not sufficiently document this significance of this change in the aviation industry and its effect on Logan operations.
   b. Runway length requirements of regional jets (in addition to Jim Muldoon's analysis contained in the Appendices). The SDEIS/FEIR underestimates the 18.97

integration of RJs into aircraft fleets and its resulting affect on the effectiveness of proposed Runway 14/32.

c. Future expansion of regional jets in the Logan market including type of regional jet. There is little discussion of the future trends (through 2015) of the increased reliance on the RJ fleet at Logan, both for existing airlines and future airlines operating at Logan. According to Airclaims data (an industry publication that contains aircraft fleet information) on future deliveries of RJ aircraft to airlines currently or possibly operating at Logan, there is wide spread increase of RJs in airlines fleets, some examples include: 18.98

   i. Continental Express has future orders (2000-2005) of 183 ERJ aircraft
   ii. Comair, owned by Delta Airlines, has future orders (2001-2005) of 72 CRJs
   iii. Atlantic Southeast Airlines, owned by Delta Airlines, has future orders (2000-2004) of 71 CRJs
   iv. Atlantic Coast Airlines has future orders (2000-2002) of 16 CRJs and 15 DRJs.
   v. Atlantic Coast Jet, operates as Delta Conection and United Express, has future orders (2000-2002) for 20 CRJs and 15 DRJs
   vi. Express Airlines (Northwest Airlinks) has future orders (2000-2003) of 37 CRJs
   vii. Air Wisconsin, operating as United, has future orders for 2 CRJs.
   viii. American Eagle has future orders (2000-2005) of 25 CRJs, and 87 ERJs
   ix. Midway Airlines has future orders (2000-2002) of 3 CRJs
   x. Skyway Airlines, owned by Midwest Express Airlines, has future orders (2000-2001) to purchase 5 DRJs
   xi. Mesa Airlines, operating as USAirways Express, has future orders (2000-2002) to purchase 28 ERJs. Their plans including of disposing of their 30 Beech 1900s and replacing them with CRJs.
   xii. Trans States Airlines, who operates as USAirways Express has future orders for 6 ERJs

As is evidenced by this information, the deployment of RJs into the fleets of airlines that are likely to operate at Logan is quite significant. The future orders reflected above extend only to about 2005 for most of the airlines, but significant investment is likely to continue. The SDEIS/FEIR barely touches on this information.

In addition, it is quite relevant to note that the predominance of new aircraft purchases is for CRJs and ERJ, not DRJs. This is absolutely vital information that the SDEIS/FEIR should reveal since Appendix C of the report discusses that CRJs will not use Runway 14/32, and use by ERJs is limited to dry weather conditions. Of the information presented above, new DRJ aircraft is only 6% of the total new aircraft purchased. 18.99

d. Additional discussion on destinations. Based on April 2001 Official Airline Guide, regional jet service is available to/from Logan for Toronto, Newark, JFK, Columbus, Montreal, Columbia (SC), Burlington, Myrtle Beach, Jacksonville, Dulles, Raleigh, Rochester, Buffalo, Chicago, Ottawa, and Cleveland, in addition to the markets mentioned in the SDEIS/FEIR including Richmond, Norfolk, Greensboro, Nashville, Philadelphia and Indianapolis. The SDEIS/FEIR underestimates the current regional jet activity at Logan and/or does not discuss the substantial increases in RJ activities from 1998 to present day. 18.100

e. There should be additional discussion about the peaking effect that regional jets may create in the future. Page 4-15 states the "growth in regional jets and carrier plans to develop individual regional carrier networks may suggest a shift towards a high fleet scenario." This condition should be discussed in additional detail since this statement would suggest that a demand management alternative would have a greater affect at delay reduction based on the growth of RJs in the Logan market. 18.101

Section 4.2.2.4 Summary of Recent Trends

1. The introduction of regional jets in the national aviation system and at Logan is a significant change in the assumptions and analysis of the DEIS/EIR. The SDEIS/FEIR makes light of the need to include a scenario reflecting the existing and future RJ fleet. 18.102

Section 4.2.3 Passenger Forecasts

1. Describe the FAA's Terminal Area Forecast (TAF) and how the forecasts are derived and the input from the GEIR. 18.103

Section 4.2.4 Operations Forecasts

1. Massport has indicated that PRAS goals are also key inputs for the airside delay analysis; but this is not mentioned as a key input. 18.104
2. There should be data on capacities of the several terminals, both in terms of gates and passenger facilities. (N.B., there are environmental review documents for Terminals A, B and E, which should be incorporated in part to show the existing and proposed passenger handling capabilities.) 18.105

3. The traffic mitigation commitments contained in the Central Artery EIS/R require development of a number of alternatives to automobile access to Logan, most of which have not been implemented. The Parking Freeze strictly limits the number of parking spaces at and serving the airport, placing additional limits on access by private vehicle. These limits are highly inconsistent with the projected passenger demands, which should be revised to reflect the reality of the ground access situation at Logan. Aircraft operations projections, and therefore delay projections, should be revised to account for items 4) and 5) above 18.106
4. A more detailed itemization of the fleet mix (by aircraft type) for the 37.5M High RJ operations forecast should include in a table. 18.107

Section 4.2.4.1 Near-Term Planning Forecasts

1. The 29M Low and 29M High Fleets do not sufficiently reflect the developing presence of regional jets in the Logan market. This is a serious deficiency, and one that should have and needs to be corrected since the "Supplemental DEIS/FEIR focuses on the 29M Low Fleet for the operational and environmental analyses". The 29M Low Fleet reflects 15,000 total operations by regional jets (or 3% of total passenger operations), and the 29M High Fleet reflects 3,000 total operations (or 0.6% of total passenger operations) Based on current operating conditions at Logan using an annualized estimate of the April 2001 OAG, regional jet activity is at a minimum 86,000 total operations, which would be 18% of the 29M Low passenger operations, and 17% of the 29M High passenger operations. Combining April 2001 OAG statistics with actual Logan year-end 2000 operations (from Massport's website = 443,640 passenger ops), the **existing airlines operations mix at Logan is composed of approximately 19.5% RJs. This is a significant difference from the near-term operations forecasts reflected in the SDEIS/FEIR and clearly illustrates the deficiency in the document to reflect major features of the near-term operational scenarios.** 18.108

   Regional jets have been in the aircraft fleet as early as 1994, and most of the airlines operating at Logan introduced regional jets in the 1997 – 1999 timeframe. The DEIS/DEIR used 1993 as the base year and the fleet forecasts missed including regional jets. This was one of the reasons why 1993 is inappropriate for the EIS/EIR analysis. Massport has indicated that they were supplementing and updating the analysis of Logan operating conditions, but clearly the 29M High/Low Fleets do not incorporate the radical change in the industry resulting from regional jet introduction. At the time of the release of the SDEIS/FEIR, the airlines likely to serve Logan have sufficient regional jets in their fleets to warrant a significant change in the 29M fleet to "bracket all conditions". Massport has failed to include this information. 18.109

The development of a 37.5M High RJ Fleet infers that the regional jet market is a future market to be considered in the long-term planning forecasts. This is inaccurate. The regional jet market is already a significant presence as evidenced by the table below. Massport is trying to use 1993 conditions to reflect current conditions. The facts are: 18.110

1) The airlines have already significantly invested in regional jets,
2) These regional jets are active in the Logan market,
3) The airlines are continuing to significantly invest in regional jets. Thus, near-term planning forecasts are invalid if they do not include a significant percentage of regional jets in the fleet.

Based on the information below, there is documented evidence of airlines historical fleet and future purchases of regional jets. Massport has failed to properly include critical information in the SDEIS/FEIR analysis. Massport uses the 29M Low Fleet forecasts in addressing operational and environmental factors of the Airside Improvement Project. These assessments are invalid since the fleet mix is flawed.

Based on data from Airclaims, an industry publication that provides information regarding aircraft equipment of air carriers, the following table reflects existing RJ fleets for airlines likely to operate at Logan and their respective future RJ deliveries based on firm orders:

Summarizing the following table that presents existing regional jet numbers for airline fleets that are likely to serve Logan and their future new firm orders for regional jets:

RJ Type	Existing Fleet	New Firm Orders	Totals RJs in Fleet
CRJ:	242	226	468
ERJ:	182	304	486
DRJ (F/D):	20	35	80
Other:	35	0	35

Compiled by MCG based on Airclaims, Autumn 2000 data

Fleet Information - Referenced from Airclaims Limited Report (Autumn 2000)

Existing RJ Fleet	#	Delivery Dates	Airlines	Future RJ Deliveries	#	Delivery Dates
CRJ 200ER	33	1997 - 2000	Atlantic Coast Airlines	CRJ 200ER	16	2000 - 2002
-	-	-	Atlantic Coast Airlines	F/D 328 Jet	15	2001 - 2002
-	-	-	Atlantic Coast Jet	CRJ 200ER	20	2000 - 2002
F/D 328 Jet	10	2000	Atlantic Coast Jet	F/D 328 Jet	15	2000 - 2001
ERJ 135ER	1	2000	American Eagle	ERJ 140	73	2001 - 2005
ERJ 135LR	25	1999 - 2000	American Eagle	ERJ 135LR	14	2000 - 2001
ERJ 145LR	48	1998 - 2000	American Eagle	CRJ 700	25	2001 - 2003
-	-	-	Atlantic Southeast Airlines	CRJ 700	30	2001 - 2004
CRJ 200ER	38	1997 - 2000	Atlantic Southeast Airlines	CRJ 200ER	41	2000 - 2004
CRJ 200LR	10	1998 - 2000	Air Wisconsin	CRJ 200LR	2	2001
CRJ 100ER	100	1993 - 2000	Comair	CRJ 100ER	55	2001 - 2005
-	-	-	Comair	CRJ 700	27	2001 - 2004
ERJ 135ER	11	1999 - 2000	Continental Express	ERJ 135ER	35	2000 - 2003
ERJ 135LR	4	1999 - 2000	Continental Express	-		
ERJ 145ER	23	1996 - 1998	Continental Express	ERJ 145XR	75	2000 - 2003
ERJ 145LR	53	1998 - 2000	Continental Express	ERJ 145LR	73	2002 - 2005
CRJ 200LR	6	2000	Express Airlines	CRJ 200LR	37	2000 - 2003
CRJ 200LR	32	1997 - 1999	Mesa Airlines	-	-	-
ERJ 145LR	8	2000	Mesa Airlines	ERJ 145LR	28	2000 - 2002
ARJ 85	35	1997 - 2000	Mesaba Airlines	-	-	-
CRJ 200ER	23	1997 - 2000	Midway Airlines	CRJ 200ER	3	2001
F/D 328 Jet	5	1999	Midwest Express	-	-	-
F/D 328 Jet	5	1999	SkyWay Airlines	F/D 328 Jet	5	2001
ERJ 145ER	9	1998 - 1999	Trans State Airlines	ERJ 145ER	6	2000 - 2004

Section 4.2.4.2 Long-Term Planning Forecasts

1. The long-term planning forecasts do not sufficiently reflect the presence of RJs in the market place. The 37.5M Low forecast assumes 5% RJs in the passenger fleet, the 37.5 M High assumes 3% RJs in passenger fleet, the 45 M High assumes 4% in the passenger fleet. All these assumptions are too low based on the purchases of regional jets from 1993 – 2005 identified in the table above. Based on current operating conditions at Logan using an annualized estimate of the April 2001 OAG, regional jet activity is at a minimum 86,000 total operations, this would reflect 17% of the 37.5M Low passenger fleet, 16% of the 37.5M High RJ Fleet, 15% of the 37.5M High Fleet, and 14% of the 45M High Fleet. These percentages reflect today's RJ activities as a percentage of the total passenger fleet assumed in 2010 (for the 37.5M passenger scenarios) and "sometime after 2020" for the 45M passenger scenario. 18.111

Since Logan is not dominated by any one airline, it is unrealistic to think that there will be fewer than 15% of RJs in any future fleet (this includes 37.5M Low, 37.5M High, and 45M High). Also, the flexibility of the RJs has already been demonstrated (specifically at Logan). (RJs have permitted additional nonstop services and increased frequencies for competitive jet services) This evidence gives excellent justification that the average percentage would be substantially greater than current conditions. Also supporting this position is the additional purchases of RJs from the airlines presently serving the Logan market. The long-term forecasts are supposed to "bracket" the range of fleet possibilities; the updated forecasts reflected in the SDEIS/FEIR do not do so.

It is unrealistic, in any conceivable scenario, that RJs would provide only 3% to 5% of the passenger market as the SDEIS/FEIR reflects. Massport keeps trying to use 1993 operating conditions to reflect a high scenario option, but the airline industry has changed since 1993, it is not going backwards, the airlines have RJs and they will use them in the Logan market. The facts are:

1) RJs are currently operating at Logan,
2) RJ operations are widespread throughout the airlines (not just concentrated in a few airlines),
3) RJs are in the airlines' current fleet and
4) The airlines have substantial number of firm orders for additional delivers of RJs

The 37.5M High RJ Fleet forecasts the percentage split between and the mainline jets and the regional jets of 53% and 35%, respectively. This split seems to underestimate a truly high RJ fleet scenario. The substantial increase in flight frequency and new non-stop jet markets that the RJ has inspired and the substantial investment in additional RJs by 18.112

airlines would support a greater % of RJs (more than 35% as reflected in the SDEIS/FEIR) in a High RJ Fleet. In the 37.5M High RJ Fleet, Massport assumes that regional jet aircraft replace "most turboprops and a portion of the conventional narrowbody jets with less than 120 seats" but does not include the additional demand created by passengers for non-stop service and greater frequencies that the RJs will spur and be responded to by airlines. RJs are simply not replacing other aircraft but are driving new markets. A 37.5 M High RJ scenario should reflect a greater percentage of RJs than is reflected in the SDEIS/FEIR.

Massport indicates that "growth in regional jets and carrier plans to develop individual regional carrier networks may suggest a shift towards a High Fleet Scenario." This statement reflects the possibility that in the future Logan may act an RJ hub for one or more airlines, or at the least, have substantial RJ activities by multiple airlines (already a current operating condition in 2001). The conditions in 1993, which included a higher number of non-jet carriers operating at Logan, may reoccur with regional jets instead of turboprops with resulting increases in the number of total operations for the same level of passengers to reflect a high operations condition. This is a condition that should be modeled for the Airside Improvement Project. However, this high condition operations scenario is not adequately reflected in the SDEIS/FEIR 37.5M High RJ Fleet. Based on the current and future RJ operations previously discussed, the 37.5M High RJ fleets more approximately a midpoint forecast of a future fleet mix for Logan, not a high RJ condition. The fleet mix should be reevaluated to increase the percentage of RJ operations and decrease the mainline jet operations to reflect a true high RJ fleet scenario. 18.112

Massport's reliance on historic growth trends at Logan has not been very accurate at identifying future changes in the aviation industry (see previous comments on underestimation of RJ use at Logan). Since the entire industry is predicting substantial cargo growth (4-6% annual growth), Massport needs to more fully justify their below-national average cargo growth forecasts (2% annual growth). Admittedly, the cargo operations numbers are still a small sub-set of the overall operations at Logan. However, these cargo operations are quite important to the environmental analysis of the Airside Improvements Program since: 18.113

- Many cargo operations occur at night (and get weighted more by the INM noise model),
- Typical all-cargo carriers (especially many foreign all cargo carriers) use older and therefore nosier aircraft, and
- Typically require instrumented runways for reliability of activities

The increase use of regional jets in the Logan market may also have an affect on cargo activity and operations at Logan. Since RJs do not have substantial capacity in the "belly" of the aircraft, that mainline jets do, the amount of cargo carried on RJs is very limited. Thus, if the existing and growing future demand for cargo must be satisfied at NE's primary cargo airport, Logan, additional cargo-only operations are likely to occur to meet the cargo volume demand that can not be accommodated on RJs and other mainline aircraft. Massport's 37.5M High RJ fleet does not appear to account for this effect of RJs on cargo operations. 18.114

The 37.5M High RJ forecast also increases the general aviation activity forecasts to "reflect recent Logan trends." The 37.5M High RJ general aviation forecasts were increased by 64% from the long-term operations forecasts for the 37.5M Low, 37.5M High and 45M High fleet forecasts, all of which reflect a forecast of 25,000 general aviation operations. The 1999 ESPR indicates that most the general aviation activity at Logan is "primarily business related, such as executive transportation and delivery of vital medical or financial products." The 1999 ESPR also indicated that highest percentage change in operations from 1998 to 1999 was in general aviation jet operations, which increased 75.7% to almost 24,000 operations.

All general aviation fleet in the 37.5M fleet forecast are forecast to land on proposed runway 14-32 (total of 41,000 operations). Why is Massport not addressing the implications of such significant increased general aviation activity on delay at Logan? Massport has not presented any concepts or alternatives to change this trend, such as having regional airports accommodate demand for general aviation activities. In fact, many communities are in the process of imposing restrictions on general aviation activities in order to constrain demand specifically for business jets. Massport should be required to treat this component in the regional airport analysis and thus provide a means to reduce the forecasts for general aviation operations. 18.115

In summary, the fleet forecasts (both short-term and long-term planning forecasts) seriously misrepresent the existing and future fleet composition of regional jets. This is of utmost importance to the modeling of the operational and environmental conditions of the proposed Runway 14-32 reflected in the SDEIS/FEIR since only limited RJ aircraft will be able to operate on a 5,000 ft. runway (as per FAA Consultant Jim Muldoon's assessment in Appendix C). The underlying assumptions of operations are invalid; thus, the resulting analyses on the operational and environmental consequences of the Airside Improvement Projects are invalid as well.

Section 4.2.5 Induced Demand

1. Massport has established FLAPS operational capacities for almost 80 combinations of runway use. Massport asserts that Logan's normal airfield capacity is approximately 120 operations per hour and this capacity is available at Logan approximately 80% of the time. The runway configurations presented in Section 1 of the SDEIS/FEIR and the FLAPS Operational Capacity indicates the following: 18.116

Configuration	FLAPS Capacity	Based on Wind, % of year Available
NE Wind using R/W 4L, R/W 4R, and R/W 9	120 ops/hour	18%
SW Wind using R/W 22L, R/W 22R, and R/W 27	103 ops/hour	28%
E/SE Wind using R/W 15R, R/W 15L, and Runway 9	75 ops/hour	17 %
Light/Moderate NW Wind using R/W 27 and R/W 33L	83 ops/hour	34%
Strong NW Wind using R/W 33L	60 ops/hour	3%*

The only runway combination that provides 120 ops/hour is the configuration noted above. Based on the above table, 120 ops/hour is only available approximately 18% of the time based on wind conditions, other wind conditions dictate that the airport's capacity is less than 120 ops per hour. (The weighted average of the above FLAPS VAPS capacities is 93 operations per hour.) It is incorrect and misleading to say 120 ops/hour is available 80% of the year. Massport should state that high capacity configurations (those accommodating over 100 ops/hour) could be available 80% of the year if attainment of the PRAS goals is ignored despite the commitments toward increased attainment of those goals of Massport and the FAA.

Strong northwest winds occur only 10-days per year according to Massport's analysis. The new runway, if used 10-days per year is likely not to induce additional demand and only reduce delay during those 10 days. However, Massport's intended use of R/W 14/32 will increase the annual service volume of the airport, allow the tower to use configurations with higher capacities, that ultimately allows the total volume of traffic at Logan to increase; thereby not making this project capacity neutral. The Preferred Alternative would increase the average VAPS capacity of the airfield to about 110 operations per hour. 18.117

Massport's justification that Logan is principally an O&D market is currently valid; however, discussions about carriers' development of regional carrier networks opens the possibility that Logan could become a mini-hub for regional jets, not to accommodate 18.118

* 10-days per year as referenced on Page1-22 of DESI/DEIR, footnote 12

transferring passengers, but for consolidating airline fleet activities (fleet maximization, maintenance, etc.) at a major airport. In any event, Massport should discuss this potential in terms of the new runway inducing demand at Logan.

Since Massport has not introduced any demand management measures to limit the demand for services at Massport and further states that the historical delay has had no impact on air carrier or passenger use of Logan, the proposed runway does indeed allow a greater overall capacity of Logan that will accommodate increases in operations. 18.119

At the end of this section, Massport states that the broad range of forecasts encompasses the impacts that "would be associated with any growth scenario." Based on the previous comments on regional jets and general aviation operations, Massport has not developed forecasts that "bracket" the likely development for Logan. 18.120

Section 4.3 Preferential Runway Advisory System (PRAS)

1. The CAC has formally rejected the established Preferential Runway Advisory System. Massport and the FAA have agreed in writing that the Report and subsequent documents should reflect that position. PRAS goals can only be accomplished if demand management techniques and fleet selections reduce aircraft operations to levels consistent with overall, not peak, airfield capacity, so that controllers can accept a runway allocation system as the primary controlling factor in their decisions. Were that the case, the intensive and difficult process of revisiting and obtaining consensus on revisions to the goals to reflect current and future conditions would be worthwhile. It would be appropriate to incorporate into the SDEIS/FEIR a commitment to that action and a proposal for a formal environmental process with Federal and State review to attain that goal. 18.121

Section 4.3.2 PRAS Objectives and Goals

1. "Equitable distribution" of impacts (sharing the pain) should remain a secondary objective to reduction in impacts overall. If and when there is progress toward that primary objective which is perceived as meaningful by the affected communities, then progress toward consensus on equitable distribution of impacts may be possible.

Section 4.3.2.2 Short Term Goals

1. The short-term goals of the current system, minimizing dwell and persistence of overflights, are probably the most important goals of the current PRAS. The specific numerical goals of the current system appear excessive. Seven hours of overflights in a 19-hour period (37% of the time, the current "dwell" objective) undoubtedly was developed in part to reflect the realities of air traffic control under the then-extant 18.122

circumstances. In practice, the seven hours are often continuous, run well beyond seven hours, and continue into the next day and beyond. This would create a difficult circumstance for most people. The current "persistence" objective, not more than 23 hours of operation over a given area during a 3-day period, allows the current "dwell" objective to be overridden (3 days x 7 hours/day = 21 hours, not 23). It would seem that "persistence" should be a more stringent objective than "dwell". Achieving consensus on revisions to these numbers is perhaps the most feasible aspect of revisiting PRAS. However, as we discuss above, the issue of the appropriateness and adequacy of PRAS as it currently exists is not limited to the current numerical goal statements.

Section 4.3.3 Continued Validity of PRAS Goals

1. 1. It does not appear that GIS data used in preparing Fig. 4.3-2 was updated from 1985, and thus may not present a realistic picture of changes in land use patterns and population distributions. 18.123
2. The data in Table 4.3-2 should (a) be disaggregated by census tract, (b) be updated by the 2000 census (as available) and (c) shown on a figure. No discussions of PRAS goals have been part of the public participation process associated with the Airside Improvement Project. 18.124
3. Use of "PRAS" objectives as a measure of mitigation of impacts should be removed from the documents. The CAC has formally rejected PRAS as defined as a reasonable system and requested it neither be referred to nor used as a basis for comparing impacts of alternatives. Attainment or approach to attainment of PRAS goals is not feasible under existing operational demand and the feasibility will deteriorate further with increasing demand. 18.125

Section 4.3.4.8 Historic PRAS Conformance Compared to Model Predictions

1. To what extent is achievement of PRAS goals assumed in the FLAPs model predictions? Section 4.3.5.1-Current PRAS Reporting and Monitoring 18.126
2. Massport should consider making the PRAS reports available on the Internet for public inspection 18.127

Section 4.4.1- Computer Modeling for Environmental Impact Studies

1. We understand that FLAPS and the Airport Machine were developed specifically for Massport. To infer the models have been used frequently around the world is inaccurate and misleading. 18.128

Section 4.4.2 Airside Modeling Methodology

1. How does the DELAYSIM model adjust for the new FAA management system of holding aircraft on the ground at departure point until airspace clearance at their final destination has been awarded? 18.129

Section 4.5 – Peak Period Pricing

1. Peak Period Pricing is a demand management tool directed to the reduction of operational delay at Logan during the periods when the airside is most congested. In the Logan case, delay is in large measure the result of a high percentage of small aircraft utilizing the airspace and airfield in competition with larger aircraft. The FAA "first come, first served" operational policy gives these smaller aircraft, with many fewer passengers, equal priority of access to that space and facility. Put differently, small packages of passengers are not required to defer to large packages of passengers. Peak Period Pricing as initially developed by Massport is a blunt economic instrument whose principal near-term impact is on service to the Cape and Islands and on their principal carrier Cape Air. This is apparently because Cape Air is alone among regional carriers in New England in operating solely with 9-seat aircraft. Only under the 37.5M High Fleet scenario would there be perceptible impact of the Peak Period Pricing program on service to other regional airports (Table 4.5-2). The original program concept (DEIS/DEIR) was projected to be moderately effective in reducing overall delay, with 4-6% of flight cancellations during peak periods under "Low Fleet" scenarios; 23% of flight cancellations projected under the 37.5 M High Fleet scenario (plus some shifting of operations out of the peak periods, under both scenarios). However, great pressure developed to minimize the impact of the proposed program on the Cape and Islands and on Cape Air. 18.130

The result was a proposal from Massport for an "exemption" program that missed its target. 18 airports, including Augusta, Bangor, Manchester, New Haven and Portland, were to be allowed at least 4 Logan operations per day without surcharge during the peak period. Delay reduction benefits of the program would be minimized under the Low Fleet scenarios and greatly reduced under the 37.5M High Fleet scenario. Since the Cape Air fleet of Cessna 402s can, and do use existing Runway 15L-33R, the exemption should only include those air carriers, like Cape Air, that can use Runway 15L-33R.

The proportion of "Regional Jets" in the current aircraft fleet operating at Logan is rapidly increasing. The most likely future fleet scenario is one in which Regional Jets play a major role, and that of small turboprop aircraft is minimized. Massport has briefly analyzed the implications of one such fleet, the "37.5M High RJ Fleet" (Section 4.7). Its finding is that with that fleet the effectiveness of the Peak Period Pricing program is significantly reduced because scheduling of the larger RJ's with seat capacities in the 30-70 range is little affected by a surcharge of $150 per operation. Additionally, runway-related delay is projected to be about 10-12% higher under the High RJ scenario compared to the High Fleet scenario.

Therefore, the peak period demand management program must be reanalyzed and redesigned. The "average VFR capacity" used in the analysis must be reduced. The impact of 18.131

increased use of RJ's must be incorporated. The "flat price surcharge" concept must be reconsidered. Then the resulting program recommendation must be fully developed including the adoption and approval of all necessary regulations, policies and other procedural elements, to be ready for immediate implementation. The approach proposed in the SDEIS/FEIR, of first establishing that the time of need has arrived, then attempting to negotiate a solution with air carriers, and only later beginning to address program design and regulatory measures and commence the approval process, should be rejected.

2. Massport should initiate discussions with carriers regarding demand management techniques, prior to selecting the "build" option. There seemed to be consensus among the SDEIS panel members that the approach Massport should take, to show good-faith effort, was to try to get the regulatory issues regarding peak period pricing identified and addressed before airline over scheduling is identified. In that way, Massport could be more responsive to implementing demand management measures since it is agreed that approval of peak period pricing by FAA may require time and various developmental iterations. It is surprising that Massport did not alter its recommendations based on the apparent consensus of the SDEIS Panel that this seems like a more reasonable and dynamic approach, and would show that Massport is indeed committed to demand management policies. 18.132

Section 4.5.1 Background

1. Based on the comments previous on this chapter on the forecasts for the 29M Low and 37.5M High not including sufficient regional jets in the fleet, the estimated annual cancellations needs to be revised.
2. The Peak Period Picing analysis presented in the DEIS/DEIR uses 110 ops/hour, "somewhat below Logan's VFR (120) and average (115) available 3-ruway capacities,"** in order to provide a conservative threshold of the impacts of peak period pricing. However, 110 ops/hour is higher than the existing FLAPS operational capacity for every runway configuration except the Runway 4L/R & 9 combination under VAPS conditions. Massport indicates that due to wind and weather considerations these combinations are only available 80% of the time, and that the remaining 20% of the time lesser capacity runway combinations must be used. Additionally, if Massport is trying to meet PRAS goals, the higher capacity runway configuration should be used less than the 80% of the time it is available. (See our comments under Section 4.2.5, above.) The "average VFR capacity" is about 110 ops/hour, 8% lower than 120 ops/hour stated in the SDEIS/FEIR. This rate of operations should be the target of any demand management system aimed at reducing airside delay at Logan. Because economic incentives or constraints inevitably function at a level less than ideal, the "trigger level" for initiation of Peak Period Pricing 18.133

** Page 4-18, DEIS/EIS

or alternative peak demand management approach should be set at 90% or less of the desired objective-in this case, at 100 ops/hour or less.

During the panel process, there was a call for additional analysis and sensitivity analysis of the peak period pricing management tool as well as for exploration of additional demand management scenarios. Neither FAA nor Massport responded to this request. When MIT Professor Fred Salvucci proposed a sensitivity analysis and MIT Professor Odoni offered his unbiased assistance to work with Massport to develop a sensitivity analysis of the proposed demand management technique and explore other techniques, his offer was met with unyielding resistance by Massport. The SDEIS/FEIR did not perform any additional modeling to document if choosing a lower threshold for the peak period would provide additional delay reduction. Massport refusal to explore no-build options in additional detail does not present a rounded analysis of the options to reduce delay. 18.134

Section 4.5.2 – Potential for Changes in Regional Carrier Fleet Mix in Response to Peak Period Pricing

1. The analysis presented does not support the conclusion that "it is not expected that a substantial portion of Logan's existing regional carrier services could be economically supported at alternate regional airports." 18.135
2. The analysis should include discussion with the regional carriers regarding the "shifting of activities to other airports." 18.136

Section 4.5.3 – Analysis of Peak Period Pricing Exemption Program

1. How did the peak period pricing exemption treat operations that could be provided on Runway 15L/33R? 18.137
2. The small community exemption program minimizes the effectiveness of peak period pricing as a delay reduction tool, particularly under the low fleet scenarios.

Section 4.5.4 – Peak Period Monitoring System

1. Instead of developing a monitoring system with respect to establishing the need for developing and subsequently implementing a demand management scheme, Massport should establish a demand management system and the triggers used for implementation. This would lend credence and certainty to its proposal, while reducing the time for implementing a peak period pricing or other demand management system. This was discussed during the SDEIS Panel. 18.138
2. Phase 2 indicates that peak period pricing would be invoked under high fleet conditions but this seems limiting; why not invoke it when a certain trigger is reached? 18.139

Section 4.6.1 Analysis of Historic (1993) and Current (1998) Delays

1. When Massport initiated this EIS/EIR in 1993, regional jets were just being introduced to airlines fleet. Since that time, regional jets have inundated the fleets of airlines serving Logan. Although Massport compared their forecast with actual 1998 operations, they have not updated their operational forecasts (with the exception of a new 37.5M High RJ scenario) since created in the DEIS/DEIR. 1993 is no longer an appropriate historic year on which to base operational and environmental analysis of the effect of the proposed airside improvement projects because the industry has changed. It is highly unlikely that Logan's future operations will ever represent the fleet mix in 1993 because regional jets were not a part of that fleet mix. The airlines are not going to withdraw their existing and future regional jets from the Logan market; thus, the foundation of 1993 as the base year for the EIS/EIR is flawed. 18.140

Massport will again reach the operations level of 1993; however, it will be with substantially different aircraft mix. The proposed Runway 14/32 was conceived to provide an additional runway for commuter and regional aircraft such as were present in 1993. The existing and future conditions present in 1993 no longer apply. Because of the integration of regional jets in the fleet, only the DRJ regional jets are likely to use the new runway under all conditions, and these aircraft types are a minority in the RJ fleet. The remaining subset of aircraft that could use the runway is diminishing since RJs are replacing many turbojets that were in the Logan market. Also, Cape Air, which is using 9-seat Cessna aircraft, has indicated they can and do use 2,557 ft. Runway 15L-33R for operations. Thus, the subset of aircraft that need a runway 2,560 ft – 5,000 ft is very limited and the delay reduction provided in the 1993 analysis of the airside improvement projects is no longer valid. 18.141

Based on information provided to the CAC Consultants from SH&E on the takeoff and landing distance assumptions for the 37.5M High RJ Fleet, the following is a summary of the aircraft that Massport has assumed can use proposed runway 14-32: 18.142

Regional Aircraft:

All Beechcraft Aircraft- these aircraft can also operate on Runway 15L-33R
Various Cessna Aircraft- these aircraft can also operate on Runway 15L-33R
De Haviland Dash 8-100
SAAB 340
Aerospatiale ATR 42
Aerospatiale ATR 72

Regional Jet Aircraft:
- Dornier 328Jet
- Embraer EMB-135 - Landing Only – Dry Conditions
- Embraer EMB-145 - Landing Only – Dry Conditions

Cargo Aircraft:
- Lear 35

General Aviation Aircraft:
- Chieftain (GA Non-Jet) -these aircraft can also land of Runway 15L-33R
- Canadair Challenger - Landing Only
- Citation III - Landing Only
- Lear 35

Adjusting the forecast annual operations based on the limited usage noted above or ability to use Runway 15L-33R, the forecast of possible annual usage is developed: 18.142

Aircraft Type		Adjusted Massport Forecast Annual Ops 37.5M High RJ Forecast
Regional Aircraft (turboprop):		
De Haviland Dash 8-100		1,741
SAAB 340		35,989
Aerospatiale ATR 42		63
Aerospatiale ATR 72		2254
	Subtotal:	40,047
Regional Jet Aircraft:		
Dornier 328Jet		42,687
Embraer EMB-135 (Landing Only – Dry Conditions)		9,845
Embraer EMB-145 (Landing Only – Dry Conditions)		34,022
	Subtotal:	86,554
Cargo Aircraft:		
Lear 35		619
General Aviation Aircraft:		
Canadair Challenger (Landing Only)		1,334
Citation III (Landing Only)		667

Lear 35	22,684	18.142
Subtotal:	24,685	

Total Adjusted Annual Operations for 37.5M High RJ Fleet that can use proposed Runway 14-32: 151,905

Based on this analysis, only 26% of the proposed 37.5M High RJ Fleet (584,612) is capable to be able to use proposed Runway 14-32, and then the actual use will depend on the airfield configuration selected based on wind and weather.

Additionally, if the Embraer 135s & 145s do not choose to use the runway because of concerns regarding landing distance, and there are more Embraer and Canadian Regional Jets than Dornier 328Jets (as the future fleet purchases based on Airclaim data indicate), the total potential operations is more realistically 36% lower than projected, thus allowing only 17% of the proposed 37.5M High RJ Fleet (584,612) capable to be able to use proposed Runway 14-32, and then the actual use will depend on the airfield configuration selected based on wind and weather. Finally, if Massport institutes a policy towards directing general aviation aircraft (specifically business jets) away from Logan and toward other regional airports (as it should be required to as part of demand management policies), only 14% of the proposed fleet could even use the proposed runway. 18.143 18.144

2. Massport has updated the analysis to reflect 1998 condition; however, they have not revised their forecasts to adequately account for the development of regional jets in the fleet. In March 2001, regional jets account for approximately 19% of the fleet mix (using OAG for activity). Thus, the resulting comparisons of Alternatives 1, 1A, 2, and 3 with Alternative 4 are not valid.
3. The comparative analyses presented in a number of subsections of this section (Tables 4.6-1, -3, -4, and -7, and Figs. 4.6-1, -3, -5, -6, and –7) should include the analysis of delay with Alternatives 1, 2and 3 as well as the "preferred alternative" 1A, in order to present a better comparison of the effects of the options. Table 4.6-1 should compare modeled effects on annual delay hours for the 3 options under the 37.5 million passenger low fleet scenario in addition. However, the table indicates that incorporation of peak period pricing significantly increases delay reduction compared to the preferred alternative, a desirable outcome. 18.145
4. This Section continues the practice, almost universal in the Report, of comparing DelaySim modeled delay hours with FAA measured hours when they are not estimated and reported on a comparable basis, despite the effort in Table 1.4.5 to present a comparative analysis. The Report should be clear in every instance when reporting or 18.146

calculation of delay is based on application of the DelaySim model. (the "airfield operations analysis").

5. It is not clear whether the first bar graph for 1998 in Fig. 4.6-1 represents modeled or measured delay by wind direction, although in context it is assumed to be a set of modeled estimates. It is also not clear whether allowable crosswind component was considered in developing the estimates. If not, the estimated delays could be substantially reduced. 18.147
6. Why was 2000 information not provided in the SDEIS/FEIS? 18.148
7. Why wasn't detailed taxiway simulation conducted for 1998? Or 2000? 18.149
8. Provide a summary of the percentage of time each runway configuration was used in 1998. Provide a summary of the percentage of time the winds were appropriate for each runway configuration in 1998. 18.150

Section 4.6.2- Total Delays

1. Exception is taken to the estimating of delay costs. While the estimated unit cost to airlines may be supportable by reasonable data, it is doubted that the same can be said for the value of time for airline passengers. Further, both have opted to use the system as it exists; the airlines have created the delay situation; and no one calculates the costs to the communities and the public of the impacts on them of the operations at Logan which they did not opt to accept. 18.151
2. How much of the total delay simulated is of operations where the delay is less than 15 minutes? 18.152
3. How much of the delay is due to cancelled flights? 18.153
4. Based on Logan's delay simulation under the No Action 37.5 million passengers High Fleet Scenario, flights at Logan would experience an average of 36 minutes per flight. However, FAA and airlines don't count delays until over 15 minutes. Therefore, by FAA practice, excessive delay on average would be about 20 minutes per flight under the worst-case scenario. 18.154

Section 4.6.3 Runway Related Delays

1. The Report should expand the presentations in Figure 4.6-2 and Table 4.6-3 to show the comparison of delays or delay reductions projected to be experienced or achieved under Alternative 2, and for all alternatives considered under the 29MP High and 37MP Low scenarios, for both IFR and VFR conditions. 18.155
2. Figure 4.6-3 needs to be revised for 29M Low and 37.5M High to reflect RJ fleet (see previous comments about inadequacy of fleet mix assumptions). 18.156

Section 4.6.4- Taxiway Related Delays

1. Exception is taken to the estimating of delay costs.

Section 4.6.5 Runway Use

1. Because of the incorporation of Regional Jets into the fleet mix is inadequate, the delay reduction benefits of the proposed runway and taxiway systems is not valid. Massport should be required to adjust the operational forecasts to include the likely percentage of regional jets and the Delaysim models rerun.
2. Since it appears a majority of regional jets are unlikely to use Runway 14/32 as modeled, the flexibility that controllers would have to shift runway use patterns may also be limited to the subset of operations that can land between 2,560 and 5,000 feet. This flexibility needs to be reevaluated. 18.157

Section 4.7 Aircraft Delay and Runway Use Results for High Regional Jet Scenario

1. The high RJ fleet represented in the SDEIS/FEIR is more the nominal case to be anticipated in the future rather than a future high (greater than 35% RJs for passenger operations) as previously discussed in earlier comments. (Based on March 2001 OAG, RJs currently account for 19% of the passenger operations)
2. The delay analysis for 37.5M High RJ also assumes the nominal case includes the suggestions of Jim Muldoon as noticed in Appendix C; however based on conversations with air traffic control tower personnel conducting air traffic operations at Philadelphia International Airport (which has both a 5,500 ft and 5,000 ft. runway), Ronald Reagan National Airport (which has a 4,911 ft. runway), and Norfolk International Airport (which has a 4,876 ft. runway), pilots of regional jets aircraft prefer to use longer runways rather than these 5,000 ft. +/- runways. Discussions with several regional jet pilots have also pointed out some interesting pilot perspectives regarding the desirability of using a 5,000 ft. (+/-) that echo the air traffic controllers experience of CRJ and ERJ pilots requesting longer runways even if it means getting in a queue for landing or takeoff. According to one pilot interviewed, he (the airline) is "on time" if he pulls away from the gate on time, if he has to queue for take off to use a longer runway – that's acceptable, if he has to circle to queue to use a longer runway for landing, he will do so instead of taking the offered shorter runway. If he is delayed due to air traffic control holds, capacity constraints, weather or other reasons, that is not considered to be an "airline matter," as long as he has left the gate "on time." Pilots have indicated that when they must use a shorter runway (i.e. 5,000 ft. runway) for takeoff or landing, everything must be precisely "on the numbers" and if, for example they need to execute a "go-around" because everything was not perfect, then they will. Pilots have indicated that they will use a shorter runway as long as capacity conditions allow such flexibility as "go-around"; however at higher trafficked airports, they will request a longer runway for both takeoff and landings. 18.158
3. The more conservative and practical approach for modeling purposes on the likely delay reducing potential of the runway is to assume that neither CRJs nor ERJs use proposed 18.159

runway 14/32 but all other types of RJs do use the runway. This case has been modeled in Section 4.7.3 and should be considered the nominal case when assessing the operational and environmental conditions of the airside improvement projects.

4. Massport states that the peak period pricing program, as envisioned and presented in the DEIS/SDEIS/FEIR will be ineffective. Since Massport has underestimated the amount of RJs in the 29M, 37.5M, and 37.5 High RJ fleets, the entire analysis should be challenged. 18.160

Section 4.7.1 Peak Period Pricing Program with the 37.5M High Regional Jet Fleet

1. Massport admits that the current Peak Period Pricing program would be ineffectual at spreading demand throughout the day. For a program to be effective, a high charge may be needed which may eliminate non-jets at Logan and violate the revenue neutral policy. This statement radically changes the alternatives that have been considered throughout the DEIS/DEIR and SDEIS/FEIR process. Effectively, Massport is realizing that peak period pricing with the current regional jet activity is not likely to be effective. Yet, Massport has simply refused to consider other demand management strategies. 18.161
2. Massport states that they want to wait upon FAA's rulemaking at LaGuardia before they can develop a peak period pricing scenario that would be effective at Logan. Moreover, Massport states that they want to wait until they can identify the specific fleet characteristics of Logan's over scheduling situation. This is why planning is so important. Massport can estimate the possibility that over scheduling of regional jets will occur (they identify this possibility in the SDEIS/FEIR); thus an effective demand management solution should be considered at part of this SDEIS/FEIR for this situation.
3. Massport does not support its comparison of Figure 4.7-3 August Weekday Peaking Patterns – 37.5M High RJ Fleet. Massport documents why the Peak Period Pricing model would not be effective for RJs, then "postulates" some hypothetical reduction. This comparison is not valid. Massport states that Peak Period Pricing as envisioned is ineffective for a high RJ fleet; thus, without revising the program, the effects of Peak Period Pricing on a high regional jet fleet cannot and should not be shown.

Section 4.7.2 Runway Delays

1. The sensitivity analysis on the use of Runway 32 for landings by Regional Jets (page 4-84) indicates that if the more pessimistic scenario were realized (only Dornier/Fairchild DRJs using RW 32 for landings), the R/W delay savings from constructing R/W 14/32 would be about the same as Alternative 2 (all options except Runway 14/32). See calculation as follows: 18.162

	Total Hours R/W Delay for 37.5RJ Fleet
Preferred Alternative (except Peak Period Pricing) (page 4-84): (based on the "nominal" RJ landing scenario of 108,100 delay hours saved)	263,500
Reduced Delay Hours Saved from Nominal case (108,100) to Low RJ Alternative (76,400):	31,700
Total Hours of Delay for Low RJ Use:	295,200
Total Hours of R/W Delay for Alt 2 (all projects except R/W 14/32)	304,300[1]

The difference is 3% R/W Delay - Is building of the runway, the controversy really worth this low amount of change?

2. Figures 4.7-4, 4.7-5, and 4.7-3 should be calculated based on the more realistic low RJ use case to present the delay hours and savings for this condition.

Section 4.7.4 Sensitivity to Regional Jet Runway Use

1. Based on the OAG for March 2001, the current RJ mix at Logan (as a percentage of the total RJs) is 54% ERJ, 25% CRJ and 21% DRJ. The future fleet mix is likely to have few DRJs since the only airlines that currently use DRJs is Atlantic Coast Jet, Midwest Express, and Skyway Airlines. Atlantic Coast Airlines, Atlantic Coast Jet, and Skyway airlines have orders for future DRJs but compared to existing and future fleets of ERJs and CRJs, DRJs are minimal. Massport has overestimated the percentage of DRJs in their analysis.
2. The use of a "sensitivity analysis" comparable to that used in Section 4.7.5 and summarized in Table 4.7-8 is requested, incorporating also any operator restrictions or procedural requirements or limitations that would affect use by specific aircraft.
3. Massport states that under strong northwest wind conditions (which occur an average of only 10 days per year), "it is unlikely that many (pilots) would reject the option of a perfectly safe and legal landing on Runway 32, particularly as they gain familiarity with the new runway" It seems that Massport has real concerns whether a 5,000 foot runway will be adequate for the regional jets. The conservative approach to model the impacts would be to assume that only the DRJs use the runway. 18.163

[1] It should be noted that these figures do not include taxiway delay savings as this was not modeled for the 37.5M High RJ Fleet Scenario as it was for the other 5 Fleet Scenarios.

Section 4.7.6 Northwest Wind Restriction on Use of Runway 32

1. Provide the information illustrated in Figures 5, 7, and 8 (pages D-7, D-9, and D-10-11, respectively for the 25-knot wind restriction. (The figures shown illustrate impacts of a 5-knot wind restriction) 18.164
2. For the 5-knot and 25-knot wind restriction cases, provide information on Runway 33 jet departures similar to Figure 3 (page D-5) for Runway 27 departures.

Section 4.8 Conclusion

1. Massport assesses that it has completed an analytic approach to establishing a range of potential future fleet scenarios. However, Massport has failed to recognize the impact of regional operations on the future fleet mixes at Logan. All of the near-term forecasts are out-dated, and all but the newly created 37.5M High RJ fleet is out-dated.
2. The estimation of type of regional jets in the future fleet mix has a significant impact on the delay savings potential of proposed Runway 14/32 since it is likely that only DRJs, a small percentage of the future RJ fleet will be able to use proposed runway 14/32.
3. Table 4-7-1 identifies the typical turboprop activity at Logan (presumably in 1998) in its analysis of impacts of peak period surcharges on turboprop and RJ markets. It should be noted that Mesa Airlines, operating as USAirways Express using Beech 1900 aircraft has plans to dispose of these turboprops and replace them with CRJs. Mesa already has fixed orders for 28 ERJs. American Eagle, operating turboprops in the Logan market in 1998, has firm orders for 112 new regional jets, of which 87 are ERJs and 25 are CRJs. American Eagle currently has 74 ERJs in its fleet. Thus, of the turboprops identified in this table, only Cape Air's 9-seat Cessna 402's are likely to be able to use proposed Runway 32. This illustration points out the inadequacies of the underlying assumptions and analysis developed in the SDEIS/FEIR with regard to regional jet activity and estimations of type of regional jets active in the Logan market. 18.165
4. According to the OAG for April 2001, Cape Air represents approximately 21,000 ops per year or about 5% of the current total passenger operations. The 37.5M High RJ fleet illustrated in Table 4.2-4 of the long-term forecasts indicates there will be 12% regional non-jets or 65,000 operations of regional non-jets. Cape Air's existing operations (21,000) equals about one-third of this amount (assuming no growth in Cape Air's operations). Other non-jet operations are anticipated to account for the remaining two-thirds of the regional non-jets. Turboprops that currently operate at Logan include Dehaviland-8, Fokker 100, Saab 340, and Beech 1900, but based on future fleet acquisitions by the airlines serving Massport, it is likely these turboprops will be replaced by future RJs (ERJs or CRJs). Massport has not demonstrated their forecasting methodology supports their long-term operations forecast for the 29M, 37.5M or High RJ Fleet. Thus, the resulting operational and environmental analyses are inadequate. 18.166

5. The current forecasts in the 1999 ESPR and the 37.5 M High RJ Forecasts both reflect substantial long-term gains in general aviation activity, primarily due to business jets (typical type Lear 35). Massport needs to address this component of the market and offer specific alternatives to shift these operations to other airports so as to minimize these operations at Logan. If delay reduction is really the intention of Massport, why are their long-term forecasts showing increasing general aviation activities? This seems contrary to their goals of reducing delay. 18.167

Chapter 5. Affected Environment

Overview

The most inappropriate and insensitive aspect of this chapter and of the entire document is reliance on the FAA definition of the "threshold of noise compatibility with residential land use" as 65 dB DNL. While it is accurate to state that is the FAA definition, it ignores a large body of scientific evidence and opinion and the determinations and practice of many other responsible agencies both US and international. 65 dB DNL is not the "threshold of noise compatibility with residential land use", it is at a minimum the level of severe impact of noise on residential land use. To infer that if one lives outside of the 65 dB DNL contour one should not be seriously annoyed and adversely impacted by aircraft noise is in the politest of terms a significant misinterpretation or misrepresentation of reality. It also ignores evidence that aircraft noise is more annoying than noise from most typical sources that affect residential habitation. EPA has recommended 55 dB DNL as the goal for outdoor noise exposure in residential areas, and HUD has accepted that recommendation. 18.168

While the proponents, in the SDEIS/FEIR, have acceded to the directive of the Secretary by adding 60 dB DNL contours and population summaries to the comparison of 2 alternatives, this (and the directive) is inadequate. First, 55dB DNL should be identified as the "threshold of incompatibility" with aircraft noise for the areas impacted by Logan operations. Second, exposure contours and exposed populations within those contours should be shown, tabulated and compared for all alternatives. Third, measures to reduce or mitigate all noise exposure within those contours, from the most severe to the least severe, should be identified and examined as to cost and effectiveness.

Another inappropriate and insensitive aspect of this and succeeding Chapters is the treatment of odor impacts in the immediate Logan surroundings from aircraft operations. These odors are real, they are annoying, and they may be associated with chemicals having other impacts as well. Massport persists in failing to apply appropriate emission factors and dispersion/exposure models in the analysis of this concern. While the changes in this situation associated with any of the alternatives under consideration may prove to be minimal, the larger problem goes unaddressed. 18.169

This entire process should not be only an exercise comparing limited alternatives to address a specific problem. This is likely to be the last large-scale environmental review of Logan operations and impacts, the last opportunity for the affected publics to have significant input to the decision-makers and regulators, a last chance to meaningfully affect public policy and investment in a most significant system, for the foreseeable future.

The "base year" for analysis for this SDEIS/FEIR unfortunately has been selected as 1998. In the year 2000, all Stage 2 aircraft were eliminated from the U.S. fleet. It is indicated in the text that this likely reduced noise exposure by about 3 dB. The combination of a short-term trend to a lower level of aircraft operations and the elimination of Stage 2 jets has likely resulted in the lowest noise exposures around Logan for several years and the lowest likely to be experienced in the future. Affected publics and decision-makers should clearly perceive this situation, which opportunity can only be afforded by full presentation and comparison of the information for the year 2000 in a manner comparable to that of the selected base year. 18.170

The discussion of noise metrics is appreciated. The addition of evaluation and presentation of data on "Times Above" exposure is useful. The SDEIS/FEIR could have been more useful in this regard if in Chapter 4 information on dwell and persistence were included, rather than citing its availability in Massport reports. 18.171

Section 5.2 Noise

1. We compare the 1998 operations data reported in Table 5.2-1 of the SDEIS/FEIR with the "base case" 1993 data reported in Table 5.2-2 of the DEIS/R. Jet aircraft nighttime operations have increased by 47% or 34 operations per night (an "equivalent" increase of 340 operations, all in Stage 3 or "hush-kitted" stage 2 aircraft) while turboprop nighttime operations have decreased by 19%. Daytime operations of jet aircraft have increased by only 6% in this period, with 622 in 1993 and 662 in 1998, while turboprop aircraft operations in daytime decreased from 590 in 1993 to 553 in 1998, a decrease of 37 operations or 6%. There are two trends exhibited here, both of which are significant to the current discussion.
2. First, nighttime operations of commercial jet aircraft are increasing significantly as would be predicted from the impact of the introduction of Stage 3 aircraft and the absence of restriction on their nighttime operation in the Massport noise rule. While these aircraft are quieter than Stage 2 planes, their operation still imposes significant noise impact. Second, the presence of turboprop aircraft in the Logan fleet mix is diminishing, presumably reducing their impact both on operational delays and on the utility of the proposed RW 14/32.
3. Table 5.2-1 should be updated by the inclusion of data for the year 2000. The utility of Figures 5.2-1 and 5.2-2 would be improved by providing separate figures for jet and for turboprop aircraft operations. These 2 figures are of course somewhat idealized. The statement in the caption of Fig. 5.2-1 stating "Jet departures cross the shoreline of the Southshore at or above 6,000 ft." is a statement of intent rather than of fact. Other Logan data has shown less than full conformance to that requirement. 18.172
4. The assertions of the South Shore communities that approaches to 33L pass directly over Hull High School suggest that the track depicted in Figs. 5.2-2 and 6.2-2 is not realistic. This matter should be further reviewed. In addition, the 18.173

FAA should evaluate the feasibility of an approach path for all RW33 landings that passes north of the Hull peninsula before acquiring the runway heading, at least under VFR conditions pending implementation of a GPS-based ATC system. All such flights from the south and west should be vectored to pass over inhabited areas at an altitude of at least 6000 feet. 18.174

5. There should be a further statement, comparable to the admission and commitment relative to RW 27 departure track conformance appearing in Section 5.2.3.2, of FAA intent to ensure compliance. In both cases, procedures and equipment sufficient to provide both pilots and controllers with the capability to conform to the required constraints should be procured and installed forthwith. It is noted these figures are mislabeled as "...Tracks for Existing Runway Configurations." 18.175
6. Figs. 5.2-2 and 6.2-2 show an offset approach track to RW 32. The extended centerlines of RWs 33L and 32 cross at about the Hull peninsula, and approaches to these 2 runways will have to be adjusted to avoid conflicts. We have been seeking information on the proposed approaches during and since the ARC process. Any impact on the projected capacity of these runways associated with ATC approach procedures and tracks should be discussed. 18.176
7. The departure procedures for RW 27 have been in effect now for a full 5 years, yet still are not being fully complied with despite a full EIS process and ROD. All the FAA is willing to commit to at this time is "we'll try to do better" (p. 5-19). **That statement is hardly likely to engender community confidence in other FAA/Tower commitments, such as "achieving substantially better conformance to PRAS" or "maintaining over-water tracks for departures from 15L and 14" or even "RW 14/32 will be unidirectional".** 18.177
8. It is stated (p. 5-24) that the TAN and TA24 threshold levels were selected on the basis of speech interference. The more stringent and important criterion of sleep interference should have been selected. This requires selection of significantly lower thresholds than the minimum of 65dB. 18.178
9. On the same page is a statement that reduction of the higher noise exposure levels requires better conformance to PRAS goals. It should not be necessary to point out that fewer operations overall, and fewer night operations in particular, would provide greater and more certain benefit.
10. The corrections to the monitoring system response to aircraft-only signals are encouraging (p. 5-28 and Table 5.2-5). However, 50% of the comparisons of INM predicted and monitored noise exposure show a significant difference, indicating clearly the need for further improvement. 18.179

Section 5.3 Cultural Resources

1. With respect to Section 4(f) of the DOT Act, and findings thereunder, two comments are made. First, 65 dB DNL is an excessive level noise for determining absence of impact. Second, an assessment should be made as to whether any 4(f)

lands were exposed to a lesser level of noise impact in 2000. Were that the case, and those lands were to be exposed to higher levels in the future, that may be considered an impact.

Section 5.4 Air Quality and Odors

1. Note the comment above with respect to odors.
2. Aircraft engine emissions from operations at Logan of oxides of nitrogen represent a significant source of that ozone precursor. These emissions, calculated over the LTO cycle of operations below 3000 feet elevation and therefore ignoring emissions at higher altitudes, represent about 85% of emissions of those contaminants from Logan operations. NO_X emissions are increasing due to the design differences between Stage 2 and Stage 3 aircraft engines. They will increase further due to increases in operations of jet aircraft at Logan. Yet no effort is being considered to reduce those emissions. Instead, Massport announces proudly a program to go after sources responsible for less than 15% of the current emissions! 18.180

Section 5.5 Biotic Communities

1. (Please refer to our comments on the proposed Taking of the state-listed endangered Upland Sandpiper, under Chapter 6 below.)

Chapter 6. Environmental Consequences

Overview

It must be remembered that the population noise exposure levels and numbers in the SDEIS/FEIR and other related or preceding reports are estimates, not precise figures. Statements of confidence limits, error bars, or probabilities should accompany them. First, the data regarding flight tracks and elevations is an idealized representation of the real world, and cannot account with precision for the actual behavior of aircraft in the future. Second, it is based on assumptions regarding actual operations and of the fleet that performs them; as to schedules, numbers, and aircraft types. Therefore, the depicted contour intervals are bands of somewhat uncertain location and width rather than bright lines. Third, the population estimates are derived from the best available information that in this case is the 1990 census tract data. The information is outdated albeit the best available, it contained errors or uncertainties when it was first assembled, and the algorithm used in the INM assumes the population in a given tract to be evenly distributed over the tract, which rarely is the real case. Taking all of that into account means that the principal value of the exercise is to provide comparisons of impacts of future scenarios, which is what the proponent has principally intended in this case despite having failed to make that entirely clear. 18.181

A far more significant concern with the information presented is its reliance on two key assumptions. The first of these is that Tower controllers will in the future attain significantly greater conformance of operations with the "PRAS" criteria concerning runway end utilization and overflight dwell and persistence (setting aside for the moment the issue of whether the current PRAS criteria should be reviewed and possibly revised). These are goals and criteria, not mandates or orders. The degree of attainment has been poor in the past. Despite important efforts to improve the utility of the system, the degree of attainment or conformance remains a function of the personnel of the FAA Tower. Their workload and their ability to adjust to the recommendations of the PRAS system is affected by weather, runway availability, instantaneous mix of aircraft, and intensity of operations, and by the other tools available to them and the pilots. It is for those reasons we have requested (without success, so far) that alternative forecasts be developed that reflect maximum throughput of aircraft based on weather conditions and runway availability, intending that a more realistic sense of the likely long-term future noise exposure be provided for comparison. 18.182

The second assumption is the extent to which RW 14/32 will be used by the future fleet mix. The keys here are the extent to which Regional Jets (RJs) will be introduced into the fleet, what the capabilities and characteristics of the specific aircraft will be and what the decisions of their operators and pilots will be in terms of use of the runway, and to what extent the turboprop fleet will be replaced by RJs. On these points we disagree with the SDEIS/FEIR assumptions and conclusions, as reported under Chapter 4 comments.

The heading **"Noise Benefits"** (p. 6-2) should be replaced by one reading **"Potential Reductions in Noise Disbenefits".** All the representations under that heading are based on optimistic, unsupported, best-case scenarios.

The statement on p. 6-3 to the contrary, there appears to be an "irretrievable commitment of natural resources" in the loss of upland grassland habitat for the endangered upland sandpiper.

Section 6.1 Introduction

1. The limitation in the SDEIS/FEIR to comparison of the "Preferred Alternative" (all actions except Peak Period Pricing which the CAC does not support) with the "No-Build" case is not appropriate. Many of the taxiway proposals appear independently buildable and beneficial, and are not controversial (with the exception of the Centerfield Taxiway proposal). Massport has circumscribed the potential delay reduction benefit of Peak Period Pricing by unreasonably constraining its introduction, and appears to ignore its projected benefits under several scenarios. As previously stated, the requirement of this presentation that a commentator return to the DEIS/R for other comparisons is not just inconvenient, it forces reliance on outdated information. We have argued against this limitation in several forums but have been rebuffed, and therefore draw the inference that Massport and the FAA are not committed to demand management and will not accept even as a phased approach less than the full construction project as initially conceived. This rejection in principle of demand management is illustrated by the first sentence of the second paragraph of Section 6.2.1.1. 18.183
2. In Chapter 4 a reasonable case is made regarding the developing emphasis on Regional Jets in the fleet mix, and the declining role of non-jet carrier aircraft. Other statements in that Chapter indicate that the "low fleet" assumption represents the current situation and is the most likely future scenario with respect to smaller, non-jet carrier aircraft. However, in the SDEIS/FEIR the scenarios presented and compared in Vols. 1 and 2 are 29M Low Fleet, 37.5M High Fleet, and 37.5M High RJ Fleet. For comparison of noise and air quality impacts of future scenarios with each other and with the current situation, as well for comparison of impacts on delay, the more likely future scenarios should be directly compared in the main volumes. The environmental consequences do not reflect the appropriate forecasts assumptions for the 29M low, 37.5M high, and 37.5M high RJ operations forecasts since regional jets and cargo operations are not adequately represented in short or long term planning forecast.

Section 6.2 . Noise

1. Additional noise analysis should be performed to include an analysis of flight tracks impacts by alternative noise metrics (which has been provided at other airports (Seattle Part 150 study)) including: 18.184

   - probable number of overflights by geographic area (55 DNL through 75 DNL)
   - population likely highly annoyed, using appropriate relationships[1] ,
   - people potentially awakened (sleep disturbance) looking at both open and closed windows using SEL at individual points on the ground with the sleep disturbance curve produced in 1997 by the Federal Interagency Committee on Aircraft Noise
   - people potentially experiencing speech interference, using the time above metric broken down to people exposed to sound above 65 dB for periods greater than 10, 30, 60, 90, 120 and 150 minutes per day.

   To iterate, the comparison between current and future conditions should use 2000 as "base case" because of the differences between 1998 and 2000. These differences include the elimination of Stage 2 jet aircraft and the growth of the Regional Jet fleet operating at Logan (see comments re Chapter 4).

2. The argument (p. 6-8) that daytime congestion will increase nighttime operations is belied by Fig. 4.2-1, which shows the daytime peak ending at 6 PM, after which demand tails off rapidly. To suggest that congestion (or in the alternative, the impact of Peak Period Pricing) will push or cause the rescheduling of so many operations into the evening period that some operations will be forced into the very late evening is inappropriate. This questionable assertion is reflected in Table 6.2-1 as well as in the text. Admittedly, shifting operations into the evening hours is not desirable, but it doesn't have the same impact as shifting them into the nighttime hours. 18.185

   More detailed information (more specific to location than the general INM census data) regarding the population estimates and noise sensitive sites within the 55 dB, 60 dB, 65 dB, 70 dB, and 75 dB DNL noise contour are required that more accurately estimates the current population residing in these areas. 18.186

3. The assumed "significant reduction in nighttime operations" under Alternative 1A ignores the limitation on nighttime operations that has in the past been credited to the Logan noise rule prohibiting Stage 2 aircraft from operating at night. That rule 18.187

[1] *Schomer, Paul: A White Paper: Assessment of Airport Noise Annoyance, January 2001.*

is no longer effective, as Stage 2 aircraft operations have been eliminated entirely. The only barrier to nighttime operations is the scheduling decisions of the operators, free, as Massport asserts, to "schedule their aircraft to meet the public's travel and shipping needs" (p. 6-8). Or, in another view, to optimize the utilization of their fleets by offering low-fare options during night hours and rescheduling positioning movements to times more convenient for them.

4. It is apparent from active community and citizen participation in the current Airside Improvement Projects planning process that Logan noise impacts and significant community reaction are not confined to the 60 DNL contour area as modeled by the INM. It is also apparent that lack of congruence between the modeled and monitored noise levels in some areas, and the absence of noise monitors in other areas, have significantly undermined public understanding of and confidence in the INM model outputs. The following additional measures should be undertaken: 18.188
    - The modeling effort should be extended to incorporate a 55-DNL contour, and the tables and figures of Section 6.2 should be amended to include this additional data.
    - Additional and/or modified monitoring locations should be established and maintained, sufficient to ensure representative data on actual noise levels in all impacted communities.
    - The flight track inputs to the INM should be truly representative of actual tracks flown by jet AC under all conditions.
5. We understand that during nighttime hours of low traffic activity, arriving jet aircraft are allowed unrestricted approaches at altitudes over 3000 feet, which could contribute to nighttime noise impacts not reflected in the INM outputs. This information should be checked, and the practice curtailed or eliminated. 18.189
6. There should be developed a common understanding among the concerned parties of the conditions under which "awareness" of overflights of jet and of turboprop aircraft becomes " annoyance"; and of the degree of annoyance (in a manner analogous to the "Schultz curve".) 18.190

Section 6.2.1.2 Flight tracks.

1. While the final approach track to RW33L within 5 miles of the runway threshold is "over water", and the same would be true for RW32, it must be noted that a significant portion of approach tracks at altitudes less than 3000 feet are over land. The departure tracks for RW15R and proposed for RW14 are supposed to be over water until an altitude of at least 6000 feet is attained, but that's not always the case. The claims of a substantial shift of operations to "over water" as a result of the construction of RW14/32 must be tempered by recognition that existing operations result in vigorous opposition from the affected South Shore communities. 18.191

2. The text should provide additional information on flight tracks out to an altitude of at least 6000 feet. The explanation of the development of the flight tracks should discuss and if possible explain the community observations of inconsistencies with respect to both track and assumed altitude. 18.192

Section 6.2.1.3 Runway Use

1. The utility of the tables in this section would be improved by including comparable information from the DEIS/R for the omitted scenarios, and by also including an appropriate "RJ" scenario. This would enable to comparison by direct inspection of the impacts on use of each runway combination under each alternative for each scenario. (The scenarios should include, in addition to those already in Tables 6.2-2 and -3, 27M High Fleet, 37.5M Low Fleet, and a revised 37.5M RJ fleet.) Most importantly, it would illustrate the impact on projected runway use of a realistic RJ scenario, as discussed in our comments under "Chapter 4", and presumably show for the most probable future fleet scenario which alternative would offer the closest approach to a desirable distribution of runway usage. Alternatively, it might show for the most likely future fleet that Alternatives 1, 1A and 4 allowed only marginal differences, and demand management was essential to both delay reduction and flight distribution for minimizing noise impact. 18.193

Section 6.2.3 Area-wide Cumulative Noise Exposure Contours

1. Table 6.2-3; includes a section discussing the 37.5MP Low Fleet Scenario. When reviewing the figures and tables in this Section and in Section 6.2.7, allowance should be made for the scale of the figures. The computerized process of generating contours and determining populations within them allows a higher degree of apparent precision than would appear from the figures alone. However, as discussed earlier, this apparent precision should not be confused with accuracy, simply because the data inputs are neither highly accurate nor precise. A study of the figures themselves gives a reasonable concept of the location and extent of the changes in noise exposure under alternate scenarios.

Section 6.2.7 37.5M High Regional Jet Fleet

1. The modeling of the 37.5M High RJ Fleet should use the low RJ fleet assumed from the sensitivity analysis (only DRJs, no CRJs or ERJs) to model the environmental impacts of the runway.
2. The effects of peak period pricing in this scenario are not based on modeled results only approximated information that is not consistent with the remaining analyses.

Figures 6.2-10, -11, -12, &-13

1. Direct visual comparisons of scenarios by DNL contours for at least the No-Action and Preferred Alternatives was facilitated in Section 6.2.3, Figs. 6.2-5, -6, -7, and –8 through same-sheet presentations of scenarios. For the RJ fleet, the only same-sheet comparison afforded is for the 65 DNL contour for the No-Action and Preferred Alternatives. The other 3 figures are of single scenarios, rendering efforts at visual comparison very difficult. This is inappropriate, inasmuch as the RJ fleet appears to be the most likely scenario over the mid-to-longer term. 18.194
2. We have questioned, in our comments on Chapter 4, Massport assumptions about the composition of the future RJ fleet using Logan and the resultant projections of use of RW 32 for landings. We have found a much lower percentage of the RJ fleet will likely land on that runway. An increase in the number and percentage of smaller jet aircraft in the fleet is associated with a reduction in the percentage and number of non-jet carrier aircraft using Logan, whether in a "low fleet" or "high fleet" scenario. Thus, we project there will be considerably less usage of RW 32 for landings in the future than is predicted in the SDEIS/FEIR. Therefore, the delay reduction and the noise exposure improvements predicted for the Preferred Alternative should be scaled back, as the proposed runway likely will not afford the projected degrees of opportunities to: 18.195
   (a) reduce delays in strong NW winds through substantial shifting of landing traffic to RW 32 from RW 33L and
   (b) permit the Tower to shift traffic from the N-S runways to the 14/32-33L-27 combination.
3. As the proposed new runway would appear to be of questionable value in delay reduction and noise abatement, Massport and the FAA should shift their focus and emphasis to demand management techniques such as Peak Period Pricing, while monitoring the development and insertion into the Logan fleet mix of Regional Jets and any reduction in use of non-jet carrier aircraft.

Section 6.4 Air Quality/Odors

1. This section of the Report has changed very little from that of the DEIS/R. In general, we find the responses to our DEIS comments on this section to be inappropriate or inadequate, and therefore iterate those comments and recommendations for further study or analysis by reference hereto. 18.196
2. The odor-dispersion modeling approach has not been modified or extended to include consideration of short-term exposures to odorants from aircraft engine emissions, as requested in our comments on the DEIS/R. This failure means that odor impacts of airfield operations continue to be significantly underestimated, and the potential impacts of changes in those operations associated with the Airside Improvement Project cannot be properly assessed, for the reasons stated in our earlier comments. This is of special concern as to the "Bayswater Street" 18.197

area, where odorant emissions from taxiing aircraft in the northern portion of the airfield proceeding to takeoff on RW 22L/R would be transported. If, as suggested in the DEIS and the Report, the efficiency of those taxiing operations is significantly improved and numbers of operating aircraft in that area at any time interval do not, peak odor concentrations should not increase. However, the daily periods during which operations occur at or near peak rates will increase as operations increase, and therefore the time durations (analogous to the PRAS short term goals "dwell" and "persistence") of exposure to peak odor concentrations in the Bayswater Street area will increase.

3. If the space made available by the presence of Taxiway November and the Centerfield Taxiway together is utilized by the FAA to place more taxiing aircraft in the northern portion of the (north of RW 33L), then the odor emission source strength in that area will be increased. The results could well be detected in the Bayswater Street area as an increase in odors (although as agreed in our DEIS comments odor perception is logarithmic and it is not likely that a logarithmic increase in source strength could occur). The community concern should be addressed, and could be addressed in one of two ways: 18.198
    a. An agreement, backed by appropriate monitoring, could be reached to limit the number of aircraft on the ground north of RW 33L at any time to a number not in excess of the current practice and allowed under the current understanding with the community.
    b. Alternatively (and of lower preference), air quality monitoring for VOCs could be conducted at a suitable point in the area. Such monitoring should be automatic and continuous and for the shortest time intervals that best available technology affords.
4. It is noted that in the comparison of the Logan Dispersion Modeling System and the FAA Emission and Dispersion Modeling System VOC's were not compared. Further, the EDMS contains the same shortcomings as the LDMS, in that the dispersion model is Gaussian and the averaging time is one hour. 18.199

Section 6.5.5 Endangered and Threatened Species of Flora and Fauna

1. The SDEIS/FEIR states that approximately 37 acres of habitat of the state-listed Upland Sandpiper will be eliminated by the proposed Airside Improvement Project, primarily through the construction of the Centerfield Taxiway. It is unclear whether the 37 acres is the footprint of the new and modified pavements proposed in the Airside Improvement Project, or whether it is the total area that will be disturbed by construction. The total area impacted by construction activities associated with the Airside Improvement Project is the area of habitat that will be lost and should be reported as such. Over several years, 3 at least, some portion of the disturbed areas may be restored to a vegetative state that would constitute small patches of habitat of a type suitable for the Upland Sandpiper for nesting and feeding purposes. However, this remaining or restored 18.200

habitat will be further fragmented by the proposed installations and by the introduction of aircraft activity (taxiing and idling) in its proximity.

2. Massport proposes an on-site mitigation program which, given what would be left of the airfield grasslands and the requirements of airfield operation, is likely as good as could be expected. However, its success in providing continued breeding habitat for this endangered species is far from assured. It would appear that the proposed actions constitute a clear "taking" of the sandpipers that have historically used this area for nesting and feeding. 18.201
3. Massport also proposes an off-site mitigation program involving the restoration of the "cantonment area" of the Mass. National Guard Camp Edwards property on Cape Cod. The acreage to be restored is stated to be 150 acres. As this area has in the past been valuable habitat for the sandpiper, its restoration and long –term maintenance as grassland habitat would be valuable to grassland nesting species and potentially to additional upland sandpipers, **assuming the resulting area of contiguous acceptable habitat for the species is at least 250 acres**. (Studies have established this as the minimum area the species will utilize successfully.) Massport and the NHESP program are encouraged to undertake this program in cooperation with the MNG, as described in this section. However, it takes about 3 years to establish a grassland stand meeting the needs of the species for nesting and feeding. Therefore, unless the restoration project were completed at least three years prior to the onset of construction at Logan, there would be a period during which the loss of habitat at Logan would not be compensated for. Another potential inadequacy of this mitigation proposal is the apparently fragile nature of the commitment of MNG to provide long-term assurance of continued maintenance of the area for this purpose. This project assumes the MNG has clear title and authority to permit or undertake and thereafter maintain the habitat restoration project, of course, which has not been established. 18.202 18.203 18.204

In addition, given the habits of this bird, it is highly unlikely that the sandpipers currently using Logan as breeding habitat would relocate to the Cape. They are far more likely, we are advised, to continue to attempt to breed at Logan. If there are inadequate nesting areas, those particular birds likely will still remain at Logan without a territory, given their high site fidelity. In either case they will face even greater obstacles to survival, much less success, in the future should the project be constructed as planned. It is assumed that any juveniles that have not yet established a breeding/nesting location might relocate, although to where remains a serious question. Therefore we suggest the Upland Sandpiper Mitigation Plan as proposed (Section 6.5.5.2) falls short of precluding a "taking" under MGL c.131A. A "viable alternative for the proposed project" does exist-**elimination of the Centerfield Taxiway element of the project.** This step would both remove the potential "taking" of the Upland Sandpiper and eliminate a number of 18.205

community concerns (set forth elsewhere, both currently and in the past) about the impacts of the Centerfield Taxiway.

Should, alternatively, Massport convince the relevant agencies that elimination of the Centerfield Taxiway is not acceptable, additional mitigation **beyond that** proposed and outlined in the SDEIS/FEIR should be required.

Section 6.8.7 Other Public Health Studies

1. There should be a summary of the public health issues reviewed as related to the airside improvement projects. Massport documents the historic and on-going studies but does not provide a summary on the health affects of the proposed projects. Massport should be leading the effort to investigate the risks on health associated with Logan operations. 18.206

Section 6.10 Adverse Impacts Which Cannot Be Avoided

1. The destruction of upland sandpiper nesting and feeding habitat is a "taking" of a state-listed endangered species under the National Heritage & Endangered Species Program Act. However, it could be avoided by the elimination of the Centerfield Taxiway from the program.

Section 6.11 Short-Term Uses and Long-Term Productivity

1. Massport states that no other alternative would accomplish similar goals as the preferred alternative. However, the delay reduction based on the low RJ usage case illustrated in the RJ sensitivity analysis provides almost the same delay savings as the alternative without the runway. 18.207
2. Massport also states that delay associated with northwest winds would be eliminated (page 6-209) where page 4-76 states that the proposed runway would reduce VFR northwest wind delays by 65%. Strong northwest winds only occur on average 10 days per year. 18.208
3. Massport has indicated that the preferred alternative is consistent with long-term goal of improving the efficiency and reliability of airside operations at Logan, however, they have documented that a peak period pricing scenario as proposed in the DEIS/SDEIS/FEIR in ineffective for the case scenario with high regional jets. This is a highly likely scenario, as has been demonstrated through fleet acquisition of airlines serving Logan. Thus, the preferred scenario does not provide adequate and effective demand management techniques to assess this alternative for high regional jets. 18.209

Chapter 7. Cumulative Impacts

Overview and "Key Points"

We have commented on direct and indirect impacts of the Airside Improvement Projects under other Chapter headings, above. As Chapter 7 is intended to cover the joint or cumulative impacts of the Airside Improvement Projects when combined with impacts of other Massport/Logan and related projects, we need not repeat any of our previous observations, comments, recommendations or requests, nor does our silence on any topic of Chapter 7 infer any change in those prior comments.

We are of the opinion that the Airside Improvement Project increases average airfield capacity rather significantly, and therefore will tend to increase demand on landside facilities at Logan and on the access systems to the airport. 18.210

We believe the increased presence of regional jets in the Logan fleet will substantially diminish the utility of the proposed runway, and therefore the ability of controllers to substantially alter the current and projected future runway utilization pattern. Therefore, both the projected reductions in delay and noise impacts are unlikely to be fully realized. Since we believe the analysis assumptions made for the Preferred Alternative are flawed, we must inquire as to the dependence of the improvements and replacements planned for terminals.

Logan has been identified as one of the major sources of oxides of nitrogen, an ozone "precursor" and an air pollutant for which this area is non-attainment. Massport is required to attain a 35.2% passenger use of High Occupancy Vehicles. To date it has failed to do so, and there is no realistic program to improve the current percentage of HOV use in the light of projected passenger growth. It must therefore be assumed that passenger growth and VMT growth will be parallel, and that motor vehicle emissions will increase substantially. 18.211

Section 7.1 Introduction

1. The capacities of the airside and landside systems must match. It has not been established that the systems of ground access to Logan will be adequate to handle 37.5 million passengers within the constraints of air quality and congestion standards. The terminal capacities, existing and planned, have not been evaluated in this document against industry standards for space, movement and services to passengers. The airside is demonstrably congested, and the Airside Improvement Project will not eliminate that. Therefore we regard as unsubstantiated the assertion that there is no interrelationship and that the landside facilities can support the airside movements, and do not support the assertion that the Airside Improvement Project has "independent utility". 18.212

Further, it is clear from this Chapter that Massport is finding it difficult to replicate cargo handling facilities already displaced or being displaced by projects other than the Airside Improvement Project. That project will eliminate additional cargo-handling infrastructure. Massport has not taken into account the trends in air cargo growth nor the implications for "belly cargo" capacity of an increasing percentage of regional jets in the carrier jet fleet, which indicate the need both for additional cargo-handling ground capacity and a greater number of cargo flight operations. By eliminating cargo buildings, Massport "irretrievably commits resources to future projects". 18.213

Section 7.2 Relationship to the GEIR/ESPR

1. The SDEIS/FEIR should use 2000 as the base year.
2. The cumulative noise impact analysis must take into account our analysis of the RJ fleet and the utility of RW 14/32.
3. The odor impact analysis is inadequate and inappropriate, as detailed in our comments under Chapter 6.

Section 7.3 Relationship of the Airside Improvement Project to other Logan Projects

1. Much more than the AITC will be needed to attain the requirements both regulatory and practical for enhanced HOV utilization. 18.214
2. Terminal upgrades and replacements should demonstrate attainment of industry standards for passenger management-unit space requirements and other parameters. 18.215

Section 7.4 Long-term Cumulative Effects

1. The opposition of CAC members, appointed by their community governing bodies, to the Airside Improvement Project should be adequate demonstration that the project **is not** "consistent with local land use plans" and **will** "result in the division or disruption of established communities". Further, as the Airside Improvement Projects intends additional departures from RW 27 and the FAA and Massport have raised strenuous and serious objection to the South Boston Seaport development proposals, it is beyond argument that the project **is not** "consistent with local land use plans". 18.216
2. Because of the RJ fleet development, the project won't facilitate redistribution of air operations as projected in the SDEIS/FEIR, and therefore will not result in the projected noise redistribution or delay reduction. The noise impacts of Logan will continue to grow. While acoustic treatment of noise-impacted residences is desirable and essential, it is not full mitigation for noise impacts. Further, Massport declines to expand its program beyond that authorized and supported by Federal grants. 18.217
3. It is important to point out the problem of emissions of nitrogen oxides of which Logan is a major source, in response to the claims concerning air quality. While 18.218

the recent Massport commitment to keep future NOx levels for ground transportation at current 2001 thresholds is appreciated, the concerns of the community also addresses future NOx levels based on increased aircraft operations at Logan.

Chapter 8. Preferred Alternative and Mitigation

Section 8.1 Introduction

1. A more expansive list of mitigation measures to address community concerns regarding the Airside Improvement Project and demand management at Logan must be developed and presented in the SDEIS/FEIR. The mitigation presented is insufficient to document the FAA's and Massport's intent to address the long-term capacity situation at Logan 18.219
2. Detail how the airside improvement projects enhance operational safety.... Are you inferring the current operations at Logan are unsafe? The recommended layout asks for a deviation to FAA standards, which appears to be the opposite of enhancing operational safety! 18.220
3. Address the cost associated with each of the alternatives and why the build alternative was selected. 18.221

Section 8.2 Preferred Alternative

1. Based on the deficiencies of the operational forecasts demonstrated in prior comments, the SDEIS/FEIS does not demonstrate that Alternative 1A should be the preferred alternative. Using the low use case of regional jets (only DRJs) under the 37.5M High RJ Fleet, the delay savings for Alternative 1A is almost equivalent (less than 3% difference in delay savings) to Alternative 2. The other operational forecasts contained in the SDEIS/FEIR do not adequately represent the likely range of aircraft operations in the short and long term for Logan. 18.222
2. FAA and the State of Massachusetts should reject the SDEIS/FEIS because it does not represent the operational and environmental impacts of the alternatives due to misrepresentations of the forecasts for regional jets and cargo operations. 18.223
3. Massport should be required to specifically document which aircraft will be able to use the proposed runway and what % of delay savings is worth the estimated $33 million + $10 million planning and engineering costs. 18.224
4. It should be noted the preferred alternative does not address the long-term needs of capacity at Logan and at best is an interim solution for certain wind conditions.
5. Table 8.4-1, in what year are these costs based?
6. Massport should reflect the costs for planning, environmental and engineering so that total program costs (not just construction costs) are reflected. 18.225
7. Table 8.4-1, does not include replacement cargo buildings and parking spaces that will need to be replaced due to the project
8. Table 8.4-1, does the runway cost include lighting and navigational aids?

Section 8.3 Summary of Delay Reduction Benefits

1. References to delay reduction benefits for any level except the 37.5M High RJ Fleet is rejected due to Massport's underestimation of the presences of RJs and cargo operations.

2. Delete references of project enhancing safety since no specific safety justification has been developed in the SDEIR/FEIR. 18.226

Section 8.4 Summary of Environmental Impacts

To reiterate that since Massport's forecast misrepresent the likely operational ranges of aircraft, the environmental impact analyses should be rejected.

Section 8.5.1.2 Noise

1. Revise the outdated Logan Noise Rule, with full community participation. Include elimination of hush-kitted AC from nighttime operations, and incorporate a ceiling on total nighttime operations. 18.227
2. Extend the sound mitigation program to include schools, hospitals, residences and other sensitive uses to include the 60 DNL contour. 18.228

Section 8.5.4.1 PRAS Monitoring and Reporting

1. Include an EIS re-analysis of PRAS goals as part of the mitigation effort, not just in the monitoring and reporting 18.229
2. Make PRAS monitoring and reporting available on Massport's website for better access

Section 8.5.4.2 Peak Period Monitoring system and Peak Period Pricing Exemption Program

1. Begin administrative and regulatory process for establishing a demand management system and regulations at this time, with peak period pricing, flat pricing, and slot auctions systems all considered for adoption, and establish triggers for when the system is to be implemented. The goal of the "trigger level" should be the elimination of delay. 18.230
2. Develop additional demand management techniques that address overall demand for Logan including elements identified in Section 3.5.1. Consider also assignment of slots by terminal/operator, with a mechanism for trading.
3. Further document effective peak period pricing program for a high RJ fleet.
4. Do not restrict demand management concepts to those that exclude FAR Part 161 studies

Section 8.5.4.3 Hushkitted Aircraft

1. Begin a FAR Part 161 Process that addresses all of the above recommendations, including restrictions on use of hush-kitted aircraft at Logan, on night activity, and demand management systems. 18.231

Section 8.5.4.5 Regional Transportation Steps

1. In place of the biennial GEIR, undertake a full Airport Master Plan for review and approval by the FAA.

Section 8.6 Permits

1. Advise if FAA requires a Benefit/Cost Analysis for this project. Is so, Massport should provide this information as part of the SDEIS/FEIR. 18.232

Draft Section 61 Findings

Overview

A "Section 61 Finding" is a requirement of the Massachusetts Environmental Policy Act (MGL Ch. 30 Sections 61 et. seq., which reads in part "Any determination made by an agency of the commonwealth shall include a finding describing the environmental impact, if any, of the project and finding that all feasible measures have been taken to avoid or minimize said impact." In this instance, Massport is the state agency with that responsibility. The importance of the "Finding" is not simply that it requires the agency to describe the environmental impacts and determine that all feasible measures have been taken to avoid or minimize those impacts, in other words to summarize the Final Environmental Impact Report. It is also that, while the FEIR and commitments therein do not appear to be legally enforceable, the Section 61 Findings probably are. Thus, it is very important that the Finding be factual, accurate, comprehensive, complete and clearly and unequivocally stated.

In this case, the draft Section 61 Finding appears as Section 8.7 of the SDEIS/FEIR "Proposed Section 61 Findings". The draft Section 61 Finding fails to meet the reasonable standards described above, for a number of reasons as set forth below.

Summary of Shortcomings

1. The projections in the SDEIS/FEIR of delay reduction and impact distribution and minimization are based on incorrect assumptions and therefore do not accurately or comprehensively reflect the environmental impacts of the proposed Airside Improvement Project.
2. The project is unlikely to accomplish its goals, and the proposed mitigation commitments are inadequate with respect to the Logan Airside Improvement Project considered as a separate and separable action.
3. The Finding should be a "stand-alone" document fully describing all impacts of the Airside Improvement Program and all measures proposed to "avoid or minimize" those impacts, rather than relying on references to materials in the SDEIS/FEIR.
4. As discussed, the proponents' efforts to disconnect the Airside Improvement Project from the overall operations and impacts of Logan Airport are inappropriate. At this juncture, the overall impacts of Logan must be described and evaluated, and avoided, minimized and mitigated for two reasons. First, these overall impacts are demonstrably and significantly in excess of reasonable standards. Second, the proposed project is the last significant potential physical expansion of the facility and its capacity, and thus the last opportunity for the impacted communities to force meaningful attention to mitigation. (The GEIR/ESPR process merely provides information, and does not represent a true opportunity to address issues.) Therefore, the mitigation measures considered and

proposed must be broad and comprehensive, addressing present and foreseeable impacts.

A. Specific Disagreements

- Proposed Resolution and Vote A.
  - i. Previous comments have enumerated the ways in which the relevant environmental review documents **do not** "properly and adequately describe" the impacts of the proposed project.
  - ii. The proposed mitigation measures (as detailed below) **do not** constitute "all feasible means and measures" to avoid or minimize any environmental impacts of the proposed project.
- Proposed Resolution and Vote B.
  - i. The Preferred Alternative will fail to meet its objectives due to the failure to account for the accelerated integration of Regional Jets of specific types into the aircraft fleet operating at Logan, and their inability/unwillingness to use the proposed new runway; thereby reducing or eliminating delay reduction under NW wind conditions attributed to the proposed new runway, and the feasibility of significantly increasing the utilization of "over water" flight paths.
  - ii. The proponents refuse to propose the initiation in the near term of effective demand management techniques to reduce overall passenger and operations demand during critical periods, to shift demand to other airports, and to stimulate the use of alternative means of transportation. Further, the limited proposal for future consideration, "Peak Period Pricing" lacks specifics and in any event likely will have little impact given the shift from turboprop aircraft to larger regional jets.
  - iii. It should be abundantly clear to any unbiased evaluator that projected long-term increases in air travel demand will outstrip the efficient capacity of the "system" of existing regional airports, none of which will be able to significantly expand their airfield capacities in the light of physical and environmental constraints. However, the response of the proponents to this situation is the advancement of an inadequate and improperly led "New England Airports System Study" with built-in bias against rational solutions.
  - iv. The assertion the Airside Improvement Program will improve safety conditions is questionable. Reduction of landing minimums may increase efficiency under severely limited conditions, and may arguably be neutral with respect to safety, but it is inappropriate to credit it with enhancement of safety of Logan operations. The only safety-related aspect of the construction of the Centerfield Taxiway is the resultant reduction in bird habitat, thereby reducing the potential for "bird strikes". The Centerfield Taxiway is an effort to improve airfield efficiency, but also has the

potential to increase the likelihood of incursions of taxiing aircraft onto active runways. Operation of Runway 14/32 may enhance operational safety in a small way by affording an opportunity to separate the arrival streams of small aircraft when in use, but when RW 32 is used for landings in conjunction with use of RW 27 for departures there is a potential for conflict between a RW 27 departure and a missed or aborted approach to RW 32.

B. Incorrect Assumptions and Erroneous Projections

- Growth in Regional Jet operations (see attached separate "white paper" on this matter)
  - i. Our research and analysis indicates two critical problems. First, the projected future number of regional jet operations is underestimated. Second, the percentage of those operations that can/will use RW 32 for landings is overestimated.
  - ii. Underestimating the projected number of RJ operations understates projected noise impact in two ways. To the extent that RJ's replace non-jet (turboprop) regional carrier operations, this will increase the number of noisier jet aircraft operations without increasing the total number of aircraft operations at Logan. RJ's used to introduce new service to new markets not capable of being served by turboprop aircraft nor efficiently served by larger jet aircraft will increase total jet aircraft operations at Logan. Both effects will increase the noise-impacted populations around Logan.
  - iii. Overestimating the percentage of RJ's able/willing to use RW 32 for landings reduces the projected delay benefits of the Airside Improvement Project. More aircraft would be projected to use either RW 33L or 27 for landing, thus diminishing the departure benefit of shifting landing operations away from those 2 runways.
  - iv. Likewise, with fewer jet aircraft using RW 32 for landing, the capacity of the combination 27/32/33L is decreased from that projected and the combination would be less used by the air traffic control system. Thus, there would be less redistribution of operations to "over-water" tracks. The associated projection of noise impact reduction to the northeast and southeast communities would be reduced.
- Taking of State-Listed species
  - i. The ability of Massport to establish a mitigation program acceptable to National Heritage & Endangered Species Program has not been established.

C. Implementation of Mitigation Measures as Proposed by Massport

1.0 Runway 14/32 Unidirectional Limitation

- This commitment must be further assured, as by incorporation into a court decision

2.0 Regional Transportation Policy

- Massport does not address shifting of general aviation activities away from Logan. The 1999 ESPR and the 37.5M High RJ forecast illustrate substantial increase in general aviation (mostly business jet activity) at Logan, which could and should be addressed in a cooperative regional transportation planning initiatives.
- Under 2.2 Cooperative Regional Transportation Planning Initiatives, the last 2 bullets should be elevated to primary importance and emphasis
- A substantial degree of involvement and leadership is required of agencies with broader transportation responsibility
- There should be greater emphasis on HOV surface transportation alternatives
  i. High speed rail service to New York should be substantially enhanced
  ii. Bus transportation should be preferred over air between centers not served by rail where travel time of one to two hours is feasible.
  ii. Worcester and Manchester Airports should be served by bus from Logan Park and Ride facilities

3.0 Residential Sound Insulation

- We question whether the Airside Improvement Projects will result in "a distribution of flights more consistent with the "PRAS" goals" (see above), and therefore whether the stated outcome will result.
- The Residential Sound Insulation program should be redesigned to provide a greater degree of overall protection from aircraft noise than is now the case
- The program should be extended to provide a significant degree of sound insulation in affected areas outside of the 65 DNL contour.
- A major objective of the program should be the elimination of sleep disturbance in all bedrooms of affected residences.
- The program should not be limited by FAA funding requirements

6.0 Wildlife

- In large measure the anticipated taking of the upland sandpiper can be avoided by eliminating the Centerfield Taxiway.
- There is no assurance of the long-term dedication and maintenance of the Camp Edwards area as habitat for the upland sandpiper.

9.3 Construction Noise

- If the subsection on back-alarm noise is meant to imply that during nighttime operations use of backup alarms will be prohibited and laborers walking behind equipment will be utilized instead, it should so state

10.0 PRAS

- There should be a full commitment to the reevaluation of the goals and procedures for ensuring a maximum use of overwater flight paths and for reasonable distribution of otherwise irreducible community noise impacts.
- This process should have a high degree of community involvement. It should proceed as a supplement or follow-on to the current EIS/EIR process for the Airside Improvement Projects, and the outcome(s) should be incorporated in additional Section 61 Finding and Record of Decision.

11.0 Peak Period Monitoring System and Exemption Program

- This program as proposed is essentially meaningless. It should be rejected in its entirety, and replaced with a meaningful system that will have significant beneficial impact on delay.
- Based solely on the current and projected delays at Logan as presented by the proponents, and their argument that the condition in untenable and demanding of significant relief, there is critical need for effective action to reduce delay in the immediate as well as the long term future.
- There should be a demand management system developed and implemented over the next one to two years. There is no need or justification for dalliance in its development beyond the fall of 2001 when the FAA is expected to announce its program for addressing delay at NY LaGuardia Airport. This type of action can be designed and implemented far more rapidly than major physical changes to the airfield and offers far more flexibility.
- The program should be specifically designed to discourage the use of general aviation aircraft at Logan during periods when delay is created and at night, and of small air carrier aircraft during delay periods. Reasonable levels of service to small communities can be maintained with less frequent operations as well as by alternative means of transportation.
- Implementation of the redesigned program (which should include all necessary regulatory and other measures) should be initiated when scheduled operations are projected to reach not more than 90% of the average VFR capacity of the airfield.

12.0 Hushkitted Aircraft

- Massport should aggressively use its position as landlord to actively discourage use of hushkitted aircraft, beginning during nighttime hours and then extending to all day.

D. Additional Mitigation Measures That Should be Implemented

1. Reduction and elimination of nighttime operations
    - Massport should initiate and aggressively pursue FAA approval of an FAR Part 161 evaluation and further processes leading to authorization to control and constrain nighttime operations.
    - Massport should then phase out nighttime operations of jet aircraft between the hours of 11 PM and 6 AM, with limitations on scheduled operations between the hours of 10 and 11 PM and 6 and 7 AM.
    - Apparently during nighttime hours of low traffic activity, arriving jet aircraft are allowed unrestricted approaches at altitudes over 3,000 feet, which could contribute to nighttime noise impacts not reflected in the INM outputs. This activity should be verified, and the practice curtailed or eliminated.
2. Flight track adherence
    - Massport and the FAA should fully implement the ROD regarding RW 27 departures flight tracks and procedures, with substantial penalties for non-compliance.
    - Similar effort should be directed to adherence to departure procedures for other runways, with particular attention to "gates" and to altitude restrictions on shoreline crossings.
    - The freedom to operate at lower altitude and with less restricted flight paths under VFR conditions should be eliminated
3. Massport should prepare an Environmental Impact Statement that reanalyzes the PRAS goals with EOA and EOEA review with active participation by all communities represented in the Community Advisory Committee (CAC)
    - The PRAS goals are over 20 years old. Massport should be required to update these goals as part of the mitigation for this project.
4. HOV access enhancement
    - The target level for High Occupancy Vehicles (HOV) use should be changed from expression as a percentage of passengers. The replacement targets should be designed to maintain a level of vehicle trips to and from Logan no higher than at present. This will require expanded use of buses and rapid transit. Limousine access should be discouraged.
5. Massport and the other state transportation agencies must show that they are doing all they can to ensure the integration of the Manchester, Worcester, Providence, and Bradley Airports with Logan as a regional airport system.
    - Pending the results of the *New England Airports System Study*, Massport should either institute or allow establishment of express bus service to those airports from its Logan Express facilities.
6. The FEIR should address any legal impediments to diversion of a higher share of Logan's general aviation operations to Hanscom Field.
    - No legal impediments are identified in the SDEIS/FEIR, thereby validating a conclusion that none exist.

- No measures are proposed to accomplish the diversion of this growing segment of Logan traffic.

7. Massport should report on the status of the MEPA review for the proposed expansion of New Bedford Airport.
   - No such report is included in the SDEIS/FEIR.
8. The Final EIR should re-analyze the delay effects of a Peak Period Pricing program that contains a tightly crafted exemption for greatly affected communities.
   - As we discuss in our comments on Section 4.5 of the SDEIS/FEIR, the proposed and analyzed "exemption" is (a) far from "tightly crafted" and (b) is not limited to "greatly affected communities".
   - The impact of the proposed exemption is to significantly reduce the benefit of the Peak Period Pricing program.
9. Turn general policy goals of "minimizing nighttime noise and ... addressing and responding to noise issues and complaints" into specific noise mitigation commitments.
   - There are no such specific noise mitigation commitments in the SDEIS/FEIR.
10. The Final EIR and the Proposed Section 61 Finding should contain feasible implementation measures to ensure full access to the soundproofing program for all residents who are entitled to its benefits.
    - There are two key words/phrases in this mandate-"feasible" and "entitled to its benefits". Massport opts to define "feasible" as "funded by FAA grants", rather than accepting an obligation to provide whatever additional funds may be needed to complete or expand the program and to enhance the degree of acoustic isolation provided under the FAA terms. Massport defines "entitled to its benefits" as limited by the criteria of the FAA grant program, i.e., residences within the 65 DNL contour, with an adjustment based on streets, rather than considering ways of and a basis for providing protection against aircraft noise in areas outside the 65 DNL contour.
11. The elimination of habitat of the Upland Sandpiper must be addressed through provision of details of the habitat restoration program proposed at Camp Edwards, and the National Heritage Program must be able to evaluate the merits of a Conservation Permit.
    - The program is still under negotiation, so its details cannot be provided.
    - Assurance is lacking that Massachusetts National Guard (MCG) will either initiate the restoration or thereafter maintain the habitat created.
    - Currently MNG does not own the property targeted for restoration, that Federal approval is required and has not yet been obtained.
    - Massport suggests in the SDEIS/FEIR that if the Camp Edwards concept cannot be realized some other unspecified site will be chosen, which is not an acceptable alternative.

12. A comprehensive evaluation of health-related impacts of Logan operations to residents of adjoining communities should be undertaken. Both noise and air quality should be considered as health-impacting conditions. The design and conduct of the assessment should be undertaken with the assistance of professionals from area universities. This cohort health study should be an on-going project provided by Massport.
13. Massport should conduct a formalized Airport Master Plan Update
    - A master plan looks at the short, mid, and long-term development of the airport and projects demand and addresses required capacity improvements both for airside and landside. It also provides a preliminary environmental overview of affected environment.
    - Though Massport conducts an ESPR which addresses the near term demand, it is obvious from the Airside Improvement Project process that long-term planning by Massport is not being given enough priority. Since Massport projects increasing delays, even with the implementation of the Airside Improvement Project, a holistic approach integrating landside and airside requirements should be prepared in an Airport Master Plan process.
14. Based on the projected delays, Massport should immediately implement a demand management technique as a deterrent to predictable forecasted congestion – instead of waiting for a hypothetical "trigger" to be reached.

Responses in the SDEIS/FEIR to Comments on the DEIS/DEIR

Certificate of the Secretary of Environmental Affairs on the Draft EIR, May 7, 2000 (Vol. 4)

Overview

There are several important areas in which the SDEIS/FEIR document does not adequately and properly address the comments and requirements of the Secretary. The Certificate includes a number of strong and positive statements addressing problems created by Logan operations. Outlined below, in the order in which they are presented in the Certificate, are the requirements that are not adequately addressed and a summary of basis for that assertion.

1. Massport is required to "seek FAA approval for a Peak Period Pricing program as soon as it begins to yield real benefits".
   - As detailed elsewhere in our comments, Massport's proposal delays seeking FAA approval for any action until long after a Peak Period Pricing program "begins to yield real benefits", thus assuring those benefits will be delayed much longer than necessary.

2. Massport and the other state transportation agencies must show that they are doing all they can to ensure the integration of the Manchester, Worcester and Providence Airports with Logan as a regional airport system.
   - Pending the results of the *New England Airports System Study*, Massport should either institute or allow establishment of express bus service to those airports from its Logan Express facilities.

3. The FEIR should address any legal impediments to diversion of a higher share of Logan's GA operations to Hanscom Field.
   - No legal impediments are identified in the SDEIS/FEIR, thereby validating a conclusion that none exist.
   - No measures are proposed to accomplish the diversion of this growing segment of Logan traffic.
   - The only updated forecast (37.5M High RJ scenario), shown in the SDEIS/FEIR, includes substantially higher projections for general aviation operations at Logan (with no plan on addressing measures to reduce the demand)

4. Massport should report on the status of the MEPA review for the proposed expansion of New Bedford Airport.
   - No such report is included in the SDEIS/FEIR.

5. The Final EIR should re-analyze the delay effects of a Peak Period Pricing program that contains a tightly crafted exemption for greatly affected communities.
   - As we discuss in our comments on Section 4.5 of the SDEIS/FEIR, the proposed and analyzed "exemption" is (a) far from "tightly crafted" and (b) is not limited to "greatly affected communities".
   - The impact of the proposed exemption is to significantly reduce the benefit of the Peak period pricing program.
   - The models for the only new forecast (37.5M High RJ scenario) illustrated that a peak period pricing program (based on $150 fee) was ineffective; yet no alternative method was proposed.

6. Turn general policy goals of "minimizing nighttime noise and ... addressing and responding to noise issues and complaints" into specific noise mitigation commitments.
   - There are no such specific noise mitigation commitments in the SDEIS/FEIR.

7. The Final EIR and the Proposed Section 61 Finding should contain feasible implementation measures to ensure full access to the soundproofing program for all residents who are entitled to its benefits.
   - There are two key words/phrases in this mandate-"feasible" and "entitled to its benefits". Massport opts to define "feasible" as "funded by FAA grants", rather than accepting an obligation to provide whatever additional funds may be needed to complete or expand the program and to enhance the degree of acoustic isolation provided under the FAA terms. Massport defines "entitled to its benefits" as limited by the criteria of the FAA grant program, i.e., residences within the 65 DNL contour, with an adjustment based on streets, rather than considering ways of and a basis for providing protection against aircraft noise in areas outside the 65 DNL contour.

8. Massport should report on consultations with the FAA and discuss the pursuit of a Part 161 Waiver for the restriction of nighttime operations by Stage 3 aircraft.
   - The SDEIS/FEIR reports on discussions with the FAA concerning noise mitigation, but there is no indication of any discussion concerning a Part 161 waiver. This is a critical step in any program to prevent an otherwise inevitable increase in nighttime noise impact as well as to obtain any relief within the foreseeable future.
   - Massport should also consider how its stature and authority as landlord could be effectively applied to this objective.

9. The elimination of habitat of the Upland Sandpiper must be addressed through provision of details of the habitat restoration program proposed at Camp Edwards,

and the National Heritage Program must be able to evaluate the merits of a Conservation Permit.

- The program is still under negotiation, so its details cannot be provided.
- Assurance is lacking that Massachusetts National Guard (MNG) will either initiate the restoration or thereafter maintain the habitat created.
- We understand that MNG does not own the property targeted for restoration, that Federal approval is required and has not yet been obtained.
- Massport suggests in the SDEIS/FEIR that if the Camp Edwards concept cannot be realized some other unspecified site will be chosen, which is not an acceptable alternative.

10. The Section 61 Findings are to formalize the commitments to appropriate mitigation of each area of impact associated with Massport's preferred alternative.
    - For details, please see our separate comments, following our comments on Chapter 8 of the SDEIS/FEIR, on the inadequacies of Massport's draft Section 61 finding.
    - The draft Finding relies on references to material in the SDEIS/FEIR, instead of constituting a "stand-alone" set of enforceable commitments.
    - Since the SDEIS/FEIR fails to adequately account for the development of Regional Jet traffic and for the ability of those aircraft to use RW 32 for landings, it cannot correctly model the future delay reduction associated with the preferred alternative, the future runway use distribution, or future noise impacts.
    - Therefore, mitigation commitments based on the SDEIS/FEIR must be inadequate.

11. While not a directive to Massport, the Secretary did not accept Massport's argument that the project would not increase capacity.
    - Unless the use of the proposed RW 14/32 is clearly and effectively restricted to NW wind conditions that would otherwise preclude the use of any runway combination other than the 27/33 runway combination, we have demonstrated the availability of the 3-runway combination that would be created by the construction of RW14/32 significantly increases the average capacity of the airfield under VFR conditions.
    - Massport substantially overstates the "normal airfield capacity" of the airfield as 120 operations per hour 80% of the time. It's reporting of modeled capacity of runway combinations shows that the capacity of 120 ops/hour is attainable only when the combination 4R/4L/9 is in use under the least restrictive VFR conditions (and for which the wind direction is favorable only 18% of the time).
    - (See our comments under Section 4.2.5.)

Responses to Comments of the CAC on the DEIS/DEIR (Vol. 5)

Massport provided 262 individual responses, many of them repetitive (only in part because our comments were arranged by Chapter of the DEIS/R, and those materials are themselves repetitive), to the comments of the Consultants to the Community Advisory Committee dated March 29, 1999, and in all but a few of those responses sought to dismiss or demonstrate an error in the comment. Although we have reviewed each of those responses it is appropriate to group those we elect to contend into a limited number of topical areas. In a few instances we agree with Massport's response, in some others changing circumstances render further discussion of little value.

The responses to the comments of the CAC are grouped in the SDEIS/FEIR Volume 5 under "Letter 85, Community Advisory Committee, Anastasia Lyman, Co-Chair", and each response is serially numbered. In our grouped responses below we indicate after each in parentheses the numbers of the Massport responses to which we refer.

Adequacy of the DEIS/DEIR

In a number of instances, Massport responds to comments about the inadequacy of the DEIS/DEIR with a statement to the effect that the Secretary of EOEA determined the document complied with all applicable state requirements, apparently intending the reader to understand there is no basis for further objection. In fact, the Secretary's Certificate simply allows the process to proceed to a Final EIR. His Certificate contains 11 pages of commentary, pointing out inadequacies in the DEIR and directing Massport to clarify, to further assess, to provide additional information, and to respond to the host of comments received. He particularly pointed to the comments of EPA, MA DEP, the CAC, CLF, and the City of Boston as requiring responses by Massport. While we must grant the Secretary did not find the DEIR "inadequate" under the law and regulations nor require a Supplementary DEIR as we had requested (and as the FAA undertook), neither did he find it fully responsive to the Scope he established or sufficient to be treated as a Final EIR.

Massport has responded to comments, mechanistically and in mind-numbing detail in 8 volumes, but has provided precious little response to the other dictates of EOEA. (Responses 10, 11, 12, 96, 97, 98, 118, 169, 170)

We continue to assert that EOEA allows Massport to segment its environmental assessments of its projects, and that Logan Airport and its cumulative environmental impacts must be addressed in their totality and comprehensively, a task we feel is not carried out in the GEIR/ESPR documents series. (Resp. 1, 85)

Second major airport

Massport rejects the idea that a second major airport will be necessary by or soon after the end of its current planning period. It would appear the New England Governors' Conference concurs, and the *New England Airports System Study* also will not resurrect that concept. Further, the principal participants in that study, the operators of the region's airports, would be expected to be hostile to an additional large facility. Yet it is clear from the SDEIS/FEIR, from FAA forecasts of travel demand, and from the pressure by airlines on Congress and the Administration to promptly create more paved surface that demand will outstrip the attainable capacity of the existing airports serving eastern New England. None of the airports - Green, Worcester, Manchester, Hanscom or Logan, can add or significantly extend major runways. Logan especially is "maxed out". How, then, will those hordes of aircraft and passengers be handled? (Resp. 2, 9, 14, 59, 60, 80, 95, 99, 113, 114, 115, 17, 215, 220, 221, 222, 257)

Capacity enhancement and stimulation of growth in operations

This concern, that the Airside Improvement Project represents an enhancement of the airfield capacity at Logan and therefore will stimulate operational demand in the highly competitive air carrier environment, is challenged in the SDEIS/FEIR by the assertion that the "peak hour" capacity of the airfield will not be increased. We have addressed this (comments on Section 4.2.5, above) and based on Massport data conclude the average VFR capacity of the airfield will be increased significantly. (Resp. 16,39, 43, 51, 100, 101, 167, 186, 188, 207, 208)

Regional transportation issues

On a narrow issue, it is noted that general aviation operations at Logan are increasing significantly. We have urged serious effort to stem and roll back this increase, primarily by influencing those activities to relocate to and use Massport's Hanscom Field. Aircraft in this category, while not a large component of Logan operations, are one of the types of aircraft and operation which should be encouraged to shift to other airports because they occupy airspace and airfield capacity all out of proportion to their significance in providing transportation and make a disproportionate contribution to delay. Massport does not address any methods to reduce the forecast increases in general aviation, primarily business jet operations. (Resp. 8, 218, 219, 225)

Massport, while seeking to encourage passengers to use other airports, has not implemented feasible measures to maximize those diversions or to ensure that a significant degree of passenger diversion continues and increases. Specifically, express bus service from Logan's outlying Logan Express facilities to Worcester and Manchester are recommended. A considerable portion of what is characterized in the SDEIS/FEIR as diversion of Logan passengers appears to be new growth in traffic occurring at the regional airports because of cheap fares and frequent service. (Resp. 57. 58)

On the broader issue of efficient regional transportation, it is apparent that even with the Airside Improvement Project, delays will soon surpass the current level and will at least double within the planning period. The practical physical capacity of Logan has been exceeded for some time, if one accepts Massport's arguments about the level, impacts and costs of delay and of the inability to attain noise abatement goals. The other airports in the region have limited ability to increase airfield capacities, as well. It is therefore imperative that programs to further enhance the capacity and attractiveness of other transportation modes be aggressively implemented. (Resp. 226, e.g.)

Demand Management, Peak Period Pricing

The Massport plan for "Peak Period Pricing with exemptions" is too little and too late. It will not be effective in discouraging or shifting operations under the most likely future operations scenario. When the need becomes so critical that Massport is forced to recognize it and initiate action, the impact of those actions will (a) be years down the road and (b) less than anticipated. A demand management approach that affords assured effectiveness, conforms to any external limitations and meets the overall regional goals must be developed within the next 2-3 years and implemented (perhaps in a staged manner) soon thereafter. If passenger delay and inconvenience is to be minimized, if noise and air quality impacts are to be reduced, operations must not simply be shifted out of peak periods but reduced overall. (Resp. 63, 65, 76, 216, 229, 249)

Delay increase over the planning period

The Airside Improvement Project is presented in the SDEIS/FEIR as a limited project in which the "preferred alternative" should be compared in impact and effect only with the "no action" alternative. This approach obscures the reality that within a brief span of years, having implemented the "preferred alternative" but without major additional or alternative actions, operational delays and impacts on passengers will exceed the current levels; and within the planning period the total delay hours will reach and exceed twice the current level. On this basis, the project is properly described as a "band-aid" that ignores the long-term reality. (Resp. 13, 47)

Noise impacts (PRAS, night-time noise, cargo flights, soundproofing, hush-kits)

PRAS was intended to address the concepts of equitable distribution of impacts of aircraft noise from overflights and of minimizing the periodic duration of those impacts. Goals were set and never attained for reasons including an excess of flight operations, controller workload and system difficulties. Further, the measures of impact that were incorporated are now understood to be insufficient, and many communities not consulted when the system was developed in the early 1980's are now impacted and deserve a voice in the design of the system. Most importantly, however, is that the SDEIS/FEIR projections of changes in runway utilization and resultant shifting or reduction in noise impacts are unlikely to be attainable over the planning period. The principal reason is the change in the aircraft fleet mix toward an increased number and percentage of aircraft

unable or unwilling to use RW 32 for landing including regional jets. This minimizes the utilization and thus the value of that runway. (Resp. 20, 21, 115, 124, 181, 182, 183, 184, 210)

Aircraft overflight noise during nighttime hours is the greatest contributor to noise impacts of Logan. This is reflected (inadequately) in the DNL concept and modeling, and in sleep interruption. The latter is a very troubling experience for a great many people including many living outside of the "65 DNL contour", and may well have adverse health impacts and effects on functionality. In the past, operations during nighttime hours were somewhat minimized by the Massport Noise Rule prohibiting such operations by all but Stage 3 aircraft. Now all jet aircraft over 75,000 pounds gross landing weight are required to be Stage 3 (which includes "hush-kitted" Stage 2 planes) so there is no enforceable limitation on the number of nighttime operations. Massport resists taking any action, including but not limited to taking all the procedural steps ("FAR Part 161 waiver") to obtain authority to and impose limits on night operations. It further refuses in the context of the current environmental review and Section 61 Finding process to address reduction in nighttime cargo flights, arguing those operations do not impact delay and the Airside Improvement Project is after all only addressing delay! This ignores the larger concern about noise impacts, for which the SDEIS/FEIR claims benefits associated with the "preferred alternative". (Resp. 6, 24, 26, 55, 93, 109, 125, 126, 217)

Acoustic treatment of buildings ("soundproofing"), while overrated and overemphasized as a noise abatement or mitigation measure, is beneficial. Extension and acceleration of the program and revision of its design criteria, using Massport funds as necessary, is urged. Coverage should be extended into the area within the 60 DNL contours. (Resp. 28, 29, 134, 135, 252)

Cumulative impacts

A consistent theme of the CAC comments is that the cumulative impacts of Logan Airport activities and operations, past and future, must be addressed and effectively mitigated. Noise, air quality, and traffic congestion are the most severe impacts. Now is the time to begin.

RW 14/32 as a "unidirectional" runway

The SDEIS/FEIR evaluates the impacts and potential effects of this runway based on restricting its usage to "over water" operations, landings from and takeoffs to the southeast. It is further stated that the runway will not be used for departures. This is the basis for all projections of changes in noise impacts and delay. The CAC concern with that assurance is its credibility, which still has not been fully established. (Resp. 19, 72, 79, 246, 256)

Threatened and rare species

The Airside Improvement Project will result in a "taking" of the Upland Sandpiper. Whether this taking will be allowed by the National Heritage & Endangered Species Program remains in doubt, and the commitments in the SDEIS/FEIR are inadequate to ensure either a favorable regulatory action or the enhancement of the species in eastern Massachusetts. The plan is not assured, and no alternative is discussed. Further, the on-airfield program at Logan will certainly displace birds at least temporarily, will likely preclude successful breeding in the future there, and will expose the remaining resident birds to greater risk. An alternative not discussed is the elimination of the Centerfield Taxiway from the project. (Resp. 35, 78, 150, 254)

Odor

The assertions in the CAC comments that the model used in the SDEIS/FEIR for evaluating potential odor impacts is wrong on two counts have not been satisfactorily addressed. The use of a "puff" dispersion model is mandatory for this purpose in lieu of the one-hour averaging Gaussian dispersion model actually used. The reliance on total VOC emissions and consideration of only low-power operations overlooks the higher mass emission rate of higher-power operations and fails to account for a potential differential in odorous components of total VOC emissions. (Resp. 31, 32, 138-140, 145, 147-149, 175)

Ground access

Ground access continues to be a significant issue for Logan, Massport, and the Executive Office of Transportation and Construction of the Massachusetts Highway Department. Congestion and engine emissions adversely impact the Logan neighborhoods, especially East Boston; and affect the travelling public and transporters generally. Massport has been directed to attain a 35.2% share of total passengers utilizing High Occupancy Vehicles, has not to date, and it does not appear that with the projected growth in total passenger demand it will. Further, even if the modal split of 35% were attained, the increased number of total passengers would mean a very significant increase in single occupancy vehicle travel over time. This is an issue that needs to be addressed at this time. (Resp. 18, 112)

Construction impacts

The remaining significant concerns about construction impacts are water quality and noise. The proponent apparently proposes to discharge silt-containing water from wheel wash facilities to the infield grass (although S. 8.5.2 of the SDEIS/FEIR is vague on this point) prior to discharge to storm drain facilities or directly to the harbor. This procedure is unlikely to provide adequate treatment. (Resp. 151, 159)

The responses, and the SDEIS/FEIR, fail to clearly specify that the construction activities will be in full compliance with the MA DEP regulations (310 CMR 7.00) and policy with

respect to construction noise. The clear implication is that federal standards, which are not as stringent as Massachusetts, will be complied with. This is wrong. (Resp. 160)

Non-responsive comments

In a number of instances, the response to the CAC comment does not address the issue raised. (Resp. 66, 67, 127, 128, 130, 233, 234)

Request to FAA for Additional Analysis as part of FAA's SDEIS Panel Process

17.233

The CAC requested additional analysis from FAA and Massport as part of the SDEIS panel process. The CAC's requests have been aggregated under eight (8) general headings as shown below. Each request is summarized for brevity and convenience. Please address why this requested information was not included in the SDEIS/FEIR.

Delay Analysis and Projections

1. There should be two projected "RJ 2015 Fleets" one based on 37.5M passengers and one on a significantly lower number
2. Considerably more analysis is requested of the probable substitution over time of RJ's for turboprop air carriers.
3. These forecasts need to be reevaluated specifically based on Logan's current constraints regarding operations that affect ground access, terminal management, and parking.
4. The constrained forecasts based on the limiting development factors at Logan should be modeled to compare delay reduction options for the Airside Improvement Program.
5. Additional analysis is requested regarding impacts of air cargo fleet mixes and air cargo operations, and of other daily operational activities supporting air cargo operations, on ground access, operational delay, and noise impacts (especially nighttime noise impacts). The potential to shift air cargo operations (1) to belly capacity, (2) to other than nighttime hours, and (3) to other airports, should be analyzed as to beneficial impacts on operational delay and to noise exposure.

Demand Management/Peak Period Pricing

1. Alternatives to Peak Period Pricing (as proposed) as a demand management technique should be developed and analyzed.
2. Thus alternative strategies, aimed at reducing overall operations for a given number of passengers as well as stemming a shift to noisier aircraft and the potentially anti-competitive development of RJ operations, are required.
3. Analyze the potential impact on airline scheduling and fleet selection practices and on delays of a revenue-neutral "flat pricing" system
4. Explore how Massport as airport proprietor could influence airline fleet selection and scheduling, by, for example, revising leasing policies in the terminals.
5. Analyze the potential impact on airline scheduling and fleet selection practices and on delays of the development of an "optimum fleet,"
6. Analyses of the effects and impacts of setting an implementation trigger at 100 and at 90 operations per hour are requested.

7. Provide information on the historical measured average hourly capacity during VFR conditions at Logan and compare with the theoretical (120 ops/hour) capacities. A sensitivity analysis should be conducted to examine the extent to which delay would be reduced at several lower levels of operations per hour (i.e., 100 and 90 operations per hour). The purpose of this sensitivity analysis is to provide the foundation for the development of meaningful demand management policies.

Runway 14/32

1. Considerably more analysis is also requested of the realistic requirements for runway length for all aircraft in this category now in operation or under development.
2. Any necessary changes in the assumptions regarding the utility of R/W 14/32 and in its effectiveness in meeting its stated goal should be described and the models should be rerun.
3. Analyze annual numbers and percentages of landings and takeoffs by runway end, and overflights grouped by affected communities ("non-PRAS" operations)
4. Document how the proposed uni-directional R/W 14/32 would be required to remain as such and evaluate the legal mechanisms available to guarantee the uni-directional runway remains so.
5. An assessment of the feasibility and potential impact reduction benefits of an alternate jet aircraft approach to R/W 33L, and to R/W 32 were it constructed and found adequate for jet aircraft landings, should be performed.
6. Airspace analysis needs to be conducted on the proposed development of the South Boston waterfront
7. A request for additional analysis concerning odor impacts in Jeffries Point should be added.)

Centerfield Taxiway

1. Determine how many additional crossings by taxiing aircraft of R/W 4L/22R at other than runway ends would take place per hour during peak operations when the 4/22 and 4/22-9/27 runway combinations were in use, if the centerfield taxiway were constructed. Evaluate the impacts on the capacity of R/W 4L/22 and increased risks presented by such crossing actions.
2. Provide a comparison analysis of delay reduction if only the south half of the centerfield taxiway was developed.
3. Show how the proposed centerfield taxiway could be monitored to ensure that air quality and water quality standards north of Runway 33L would not be adversely affected from development of a centerfield taxiway system

Overall Impact Analysis

1. All base year data and comparisons of impacts and delays should be updated throughout the SDEIS to include 1998, 1999, and 2000 historical statistics.
2. Further evaluation of the relative importance of DNL contours and of dwell and persistence in determining impact of and community reaction to aircraft operations is important and is requested.

For further understanding and comparison of noise impacts, provide the following analyses:

1. The number of flights over a geographic area/community exceeding 55 DNL
2. The number of flights over a geographic area/community using single event sound exposure levels (SEL) exceeding 75 SEL
3. The population likely to be highly annoyed (Shultz Curve or other appropriate measure)
4. The population likely to experience disturbed sleep for open and closed windows, using SEL at individual points on the ground with the sleep disturbance curve produced in 1997 by the Federal Interagency Committee on Aircraft Noise
5. The population potentially experiencing speech interference, using the time above metric broken down to people exposed to sound above 65 dB for periods greater than 10, 30, 60, 90, 120 and 150 minutes per day.
6. Provide additional analysis on approach and departure flight tracks for jet aircraft, including altitudes out to 15 miles from approach and departure ends of runways
7. A cumulative noise impact analysis should be conducted that examines the combined effect from operations at Logan with other noise sources.
8. Discuss the noise benefits and delay reduction benefits that would occur if restrictions were placed on hush-kitted Stage II aircraft, and/or a FAR Part 161 process were conducted that resulted in placing restrictions on nighttime operations.

Reduced Landing Minimums

1. Analyze the annual average increase, by number of operations, by runway end in the number of approaches that would (a) be initiated and (b) carried to an elevation below the current decision heights, were the current proposal to reduce landing minimums be implemented.

Blast Fence Removal (RW 4L/22R)

1. All the potential effects of the proposal to remove the blast fence at the north end of R/W 4L/22R should be analyzed.
2. The safety concerns about the existing blast fence for landings on R/W 4L should be compared to safety concerns associated with the Hyatt Hotel for landings on proposed R/W 32.

Mitigation Measures

1. Develop a comprehensive list of mitigation measures to effectively address and mitigate community noise impacts

Each of these requests is intended to provide a direct assessment of potential impacts or operational effects of one or more elements of the Airside Improvement Project as proposed, or would provide a more appropriate basis for judging the comparative impacts of the alternatives under consideration for reduction of delay at Logan Airport. They are therefore entirely appropriate for and germane to the SDEIS/FEIR process.

White Paper on Regional Jets & Boston Logan International Airport

Overview of Regional Jets

The Regional Jet, or "RJ" as it is commonly referred to, was first introduced into commercial air service in 1993 by Comair, and has since attained yearly record growth in passenger enplanements, fleet size, and overall percentage of the regional airline market. The common definition of RJ is a commercial jet aircraft that carries fewer than 100 passengers, though most do not consider aircraft built by Boeing (B-717-200 or B-737-100) or Airbus to be RJs. Current RJ models typically range from 32 to 85 passenger seats, though 32 to 50 seats are currently the most common type.

Regional jets are classified based on the manufacturers name. There are three main manufacturers found in the RJ market today. These include:

CRJ: Canadian Regional Jet - typical series:
- CRJ-100/200 (50-52 seats) and
- CRJ-700 (70 seats),

ERJ: Embraer Regional Jet - typical series:
- EMB-135 (36-38 seats) and
- EMB-145 (48-52 seats),

DRJ: Fairchild/Dornier Regional Jet - typical series:
- DRJ328JET (30-39 seats) and
- DRJ728JET (70-85 seats)

The various express and commuter airlines have turned to regional jets to replace aging turbo-prop aircraft servicing short haul routes, usually 400 - 1,000 nautical mile segment lengths, but the segments up to 1,500 nautical miles can be most profitable for regional jets[1]. Markets previously served by turbo-props can be more easily serviced, with greater frequency by regional jets. Passengers have indicated strong preferences for regional jets over turbo-props due to safety, comfort, and speed of jet equipment.

In replacing turboprop-driven aircraft, RJs have moved regional airline traffic from the lower altitude domain of airspace into higher altitudes where the airspace is increasingly crowded by larger jet activity. At least two factors are at work: customer preference, and economic considerations. Passengers prefer the comfort that jet travel offers in being able to get "above the weather." Economically, it is often more efficient on shorter routes for the slower prop-driven

[1] *AMR-EAGLE Regional Jet Issues..htm*

aircraft to operate at lower altitudes than to waste time and fuel climbing to higher elevations. Since they are jets, RJs are more efficient at much higher altitudes[2]. Because of this, many major airlines in addition to replacing RJs for turboprop service have also begun using the smaller 50-100 seat regional jets to service routes traditionally held by the larger Boeing and Airbus commercial aircraft.

As of January 2001, there are almost 600 RJ's in service worldwide, with about 1,400 on order for the various manufacturers, to be delivered at an average of 200 per year[3].

Regional Jet Fleet & Passenger Forecasts for Massport's Airside Improvement Program

In order to make a recommendation on the feasibility of the proposed Runway 14/32, and its effect on current airfield delay figures and the environmental impacts of the project, Massport created a delay modeling methodology based on assigning levels of passenger activity to specific aircraft operations based on forecasts of estimated aircraft fleet mix.

Near Term Forecasts

The near term forecasts were based on Logan supporting a total annual passenger volume of 29 million people. For the near term, Massport created two fleet mixes of aircraft operations in an effort to "bracket" the likely operations scenarios to support 29M passengers. The difference between the 29M Low and High forecasts is that non-jet aircraft carry 11% of the passengers in the High Fleet scenario compared to 9.5% in the Low Fleet scenario. Massport's 29M Low Fleet reflects 15,000 total annual operations by regional jets (or 3% of total passenger operations), and the 29M High Fleet reflects 3,000 total annual operations (or 0.6% of total passenger operations).

Based on current operating conditions at Logan using an annualized estimate of the April 2001 OAG[4], regional jet activity is around 86,000 total annual operations, which would equate to 18% of the 29M Low passenger operations, and 17% of the 29M High passenger operations. Combining April 2001 OAG statistics with actual Logan year-end 2000 operations,[5] **RJs currently compose 19.5% of the airline operations mix at Logan.**

Massport's 29M Low and 29M High Fleets do not sufficiently reflect the existing and developing presence of regional jets in the Logan market. This is a serious deficiency, and one that should have and needs to be corrected since the Supplemental DEIS/FEIR focuses on the 29M Low Fleet for the operational and environmental analyses.

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[2] *Source: www.caasd.org/project/regionaljet/rj.html*

[3] *Aviation Daily "Regional Jets Boost Airports", March 16, 2001*

[4] *Official Airline Guide (OAG) is an industry publication that reflects the current airline activity at an airport*

[5] *Total operations from Massport's website = 443,640 passenger ops for year end 2001*

Massport's development of the High Fleet was to be able to "bracket" operations conditions that reflected the high level of non-jet commuter flights experienced in 1993. However, market conditions have changed in the airline industry due to the introduction of RJs in the market, Massport's forecasts have not been updated to reflect industry conditions, a serious error since the operational forecasts are the foundation of the environmental and operational (delay) models.

Long-term Forecasts

Similarly, Massport's long-term planning forecasts do not sufficiently reflect the presence of RJs in the market place. The 37.5M Low forecast assumes RJs to be 5% of the total passenger operations, the 37.5 M High scenario assumes RJs to be 3% of the total passenger operations, and the 45 M High scenario assumes RJs to be 4% of the total passenger operations.

All these assumptions are too low based on the purchases of regional jets from 1993 – 2005 identified in the Tables 1 and 2 below. Based on current operating conditions at Logan using an annualized estimate of the April 2001 OAG, regional jet activity is at least 86,000 total annual operations. This number would constitute 17% of the 37.5M Low passenger fleet, 16% of the 37.5M High RJ Fleet, 15% of the 37.5M High Fleet, and 14% of the 45M High Fleet. These percentages reflect today's RJ activities as a percentage of the total passenger fleet assumed in 2015 (for the 37.5M passenger scenarios) and "sometime after 2020" for the 45M passenger scenario.

Regional jets have been in the aircraft fleet as early as 1993, and most of the airlines operating at Logan introduced regional jets in the 1997 – 1999 timeframe. The DEIS/DEIR used 1993 as the base year and the fleet forecasts missed including regional jets. This was one of the reasons why 1993 was inappropriate as a base year for the EIS/EIR analysis. Massport has indicated in the SDEIS/FEIR that they are supplementing and updating the analysis of Logan operating conditions, but clearly the 29M High/Low Fleets do not incorporate the significant changes in the industry resulting from regional jet integration. At the time of the release of the SDEIS/FEIR, the airlines likely to serve Logan have sufficient regional jets in their fleets to warrant a significant change in the 29M fleet to "bracket all conditions". Massport has failed to include this information.

Massport's 37.5M High RJ Fleet Forecast

Massport introduced in the SDEIS/FEIR a new fleet mix for the long-term forecasts that incorporates the regional jet activity. They have named this new scenario the 37.5M High RJ Fleet Forecast. The Logan airfield modeling methodology of the Airside Project Draft EIS/EIR, was used to estimate runway delays and runway utilization for the new 37.5 M High RJ Fleet. The High RJ scenario examined only the runway related delays (not taxiway delays), the delay models were modified to allow the regional jets to be analyzed as separate classes, and the largest change was with respect to the use of newer weather data for estimating delays and runway utilization for this scenario.

The new fleet mix scenario assumes RJs to be 35% of the total passenger operations. The development of a 37.5M High RJ Fleet infers that the regional jet market is a future potential market that should be considered in the long-term planning forecasts since it is one of three scenarios presented as the long-term operational forecast. This is inaccurate. The regional jet market is already a presence as evidenced by Tables 1 and 2. The facts are:

1) The airlines have already significantly invested in regional jets,
2) These regional jets are active in the Logan market,
3) The airlines are continuing to significantly invest in regional jets. Thus, near-term planning forecasts are invalid if they do not include a significant percentage of regional jets in the fleet.

Based on the following information provided in Tables 1 and 2, there is documented evidence of airlines historical fleet and future purchases of regional jets. Massport has failed to properly include critical information in the SDEIS/FEIR analysis. Massport uses the 29 M Low Fleet forecasts in addressing operational and environmental factors of the Airside Improvement Project. These assessments are invalid since the fleet mix is flawed.

Since Logan is not dominated by any one airline, it is unrealistic to think that there will be fewer than 15% of RJs in any future fleet mix (in April 2001 RJs constituted about 19.5% of passenger operations) including 37.5M Low, 37.5M High, and 45M High scenarios. The flexibility of RJs has already been demonstrated, specifically at Logan. RJs have permitted additional nonstop services and increased frequencies for competitive jet services. This evidence gives excellent justification that the RJ operations are likely to be substantially greater than current conditions. Also supporting this position is the additional purchases of RJs from the airlines presently serving the Logan market.

The long-term forecasts are supposed to "bracket" the range of fleet possibilities; the updated forecasts reflected in the SDEIS/FEIR do not do so. It is unrealistic, in any conceivable scenario, that RJs would provide only 3% to 5% of the passenger market as the SDEIS/FEIR reflects. Massport keeps trying to use 1993 operating conditions to reflect a high scenario

option, but the airline industry has changed since 1993, it is not continuing to increase turbo-prop use, the airlines have RJs and they will use them in the Logan market. The facts are:

1) RJs are currently operating at Logan,
2) RJ operations are widespread throughout the airlines (not just concentrated in a few airlines),
3) RJs are in the airlines' current fleet and
4) The airlines have substantial number of firm orders for additional delivers of RJs

The 37.5M High RJ Fleet forecasts the projected percentage split between the mainline jets and the regional jets of 53% and 35%, respectively. These percentages seems to underestimate a truly high RJ fleet scenario. The substantial increase in flight frequency and new non-stop jet markets that the RJ has inspired and the substantial investment in additional RJs by airlines would likely support a greater percentage of RJs (more than 35% as reflected in the SDEIS/FEIR) to truly reflect the upper limits of a "High RJ" Fleet.

In the 37.5M High RJ Fleet, Massport assumes that regional jet aircraft replace "most turboprops and a portion of the conventional narrow-body jets with less than 120 seats" but does not include the additional demand created by passengers for non-stop service and greater frequencies that the RJs will spur and be responded to by airlines. RJs are simply not replacing other aircraft but are driving new markets. Industry analysts have estimated that 29% will be used in new markets.[6] A true "High RJ" scenario should reflect a greater percentage of RJs than is reflected in the SDEIS/FEIR in order to "bracket" the likely future operating conditions.

Massport indicates that "growth in regional jets and carrier plans to develop individual regional carrier networks may suggest a shift towards a High Fleet Scenario." This statement reflects the possibility that in the future Massport may become an RJ mini-hub for one or more airlines, or at the least, have substantial RJ activities by multiple airlines (already a current operating condition in 2001).

The conditions in 1993, which included a higher number of non-jet carriers operating at Logan, may be reoccurring with regional jets instead of turboprops with resulting increases in the number of total operations for the same level of passengers to reflect a high operations condition. This is a condition that should be modeled for the Airside Improvement Project. However, this high condition operations scenario is not adequately reflected in the SDEIS/FEIR 37.5M High RJ Fleet. Based on the current and future RJ operations previously discussed, the 37.5M High RJ fleet is more likely to approximate a medium forecast of a future RJ fleet mix for Logan, not a high RJ condition. The fleet mix should be reevaluated to increase the percentage of RJ operations and decrease the mainline jet operations to reflect a true high RJ fleet scenario.

[6] *Regional Jets Boost Airports; Pont-to-Point More Likely, Aviation Daily, March 16, 2001.*

Regional Jet Current & Future Usage at Logan

Nationally, Delta connection commuter-Comair currently has the largest Canadian Regional Jet (CRJ) fleet, with Northwest commuter Mesaba, Continental Express, American Eagle, and Delta's Atlantic Southeast Airlines also being regional jet leaders.

Based on the April 2001 Official Airline Guide (OAG), American, Delta, USAir, United, America West, Air Canada, Midway, Northwest, and Continental are currently operating regional jets at Boston's Logan International Airport. Moreover, per the April 2001 OAG, an overview of RJ operations is as follow[7]:

1. American has at least 22 flights per day using ERJs,
2. Delta has at least 26 flights per day using DRJs
3. Delta has at least 4 flights per day using CRJs
4. USAir has at least 13 flights per day using ERJs
5. United has at least 2 flights per day using CRJs
6. America West has at least 5 flights per day using CRJs
7. Air Canada has at least 5 flights per day using CRJs
8. Midway has at least 1 flight per day using CRJ
9. Northwest has at least 1 flight per week using ERJs
10. Continental has at least 1 flight per week using ERJs

According to Airclaims[8] (an industry source that compiles information on air carrier fleets) data on future deliveries of RJ aircraft to airlines currently operating at Logan, there is wide spread increase of RJs in airlines fleets, some examples include:

a) Continental Express has future orders (2000-2005) of 183 ERJ aircraft
b) Comair, owned by Delta Airlines, has future orders (2001-2005) of 72 CRJs
c) Atlantic Southeast Airlines, owned by Delta Airlines, has future orders (2000-2004) of 71 CRJs
d) Atlantic Coast Airlines has future orders (2000-2002) of 16 CRJs and 15 DRJs.
e) Atlantic Coast Jet, operates as Delta Conection and United Express, has future orders (2000-2002) for 20 CRJs and 15 DRJs
f) Express Airlines (Northwest Airlinks) has future orders (2000-2003) of 37 CRJs
g) Air Wisconsin, operating as United, has future orders for 2 CRJs.
h) American Eagle has future orders (2000-2005) of 25 CRJs, and 87 ERJs
i) Midway Airlines has future orders (2000-2002) of 3 CRJs
j) Skyway Airlines, owned by Midwest Express Airlines, has future orders (2000-2001) to purchase 5 DRJs

[7] *Information on flight activity is summarized, actual total operations per OAG have been calculated but are not included in this "White Paper."*
[8] *Airclaims Data – Autumn, 2000*

k) Mesa Airlines, operating as USAirways Express, has future orders (2000-2002) to purchase 28 ERJs. Their plans including of disposing of their 30 Beech 1900s and replacing them with CRJs.
l) Trans States Airlines, who operates as USAirways Express has future orders for 6 ERJs

Based on data from Airclaims, Table 1 presents a summary of the existing regional jets for airline fleets that are likely to serve Logan and their future new firm orders for additional regional jet aircraft. Table 2 below details the existing RJ fleets for airlines likely to operate at Logan and their respective future RJ deliveries based on firm orders. Both these tables represent a subset of the total regional jet aircraft fleet based on likely service at Boston Logan International Airport.

Table 1
Summary of Existing and Future RJ Aircraft per Airline
For Airlines Likely to Serve Logan

RJ Type	Existing Fleet / %		New Orders / %		Totals RJ Fleet by 2005 /%	
CRJ:	242	(51%)	226	(40%)	468	(45%)
ERJ:	182	(38%)	304	(54%)	486	(47%)
DRJ:	20	(4%)	35	(6%)	55	(5%)
Other types:	35	(7%)	0	(0%)	35	(3%)
Subtotal:	479		565		1,044	

Compiled by MCG based on Airclaims, Autumn 2000 data

Table 2
Existing and Future RJ Aircraft per Airline for Airlines Likely to Serve Logan

Existing RJ Fleet	#	Delivery Dates	Airlines	Future RJ Deliveries	#	Delivery Dates
CRJ 200ER	33	1997 - 2000	Atlantic Coast Airlines	CRJ 200ER	16	2000 - 2002
-	-	-	Atlantic Coast Airlines	F/D 328 Jet	15	2001 - 2002
-	-	-	Atlantic Coast Jet	CRJ 200ER	20	2000 - 2002
F/D 328 Jet	10	2000	Atlantic Coast Jet	F/D 328 Jet	15	2000 - 2001
ERJ 135ER	1	2000	American Eagle	ERJ 140	73	2001 - 2005
ERJ 135LR	25	1999 - 2000	American Eagle	ERJ 135LR	14	2000 - 2001
ERJ 145LR	48	1998 - 2000	American Eagle	CRJ 700	25	2001 - 2003
-	-	-	Atlantic Southeast Airlines	CRJ 700	30	2001 - 2004
CRJ 200ER	38	1997 - 2000	Atlantic Southeast Airlines	CRJ 200ER	41	2000 - 2004
CRJ 200LR	10	1998 - 2000	Air Wisconsin	CRJ 200LR	2	2001
CRJ 100ER	100	1993 - 2000	Comair	CRJ 100ER	55	2001 - 2005
-	-	-	Comair	CRJ 700	27	2001 - 2004
ERJ 135ER	11	1999 - 2000	Continental Express	ERJ 135ER	35	2000 - 2003
ERJ 135LR	4	1999 - 2000	Continental Express	-		
ERJ 145ER	23	1996 - 1998	Continental Express	ERJ 145XR	75	2000 - 2003
ERJ 145LR	53	1998 - 2000	Continental Express	ERJ 145LR	73	2002 - 2005
CRJ 200LR	6	2000	Express Airlines	CRJ 200LR	37	2000 - 2003
CRJ 200LR	32	1997 - 1999	Mesa Airlines	-	-	-
ERJ 145LR	8	2000	Mesa Airlines	ERJ 145LR	28	2000 - 2002
ARJ 85	35	1997 - 2000	Mesaba Airlines	-	-	-
CRJ 200ER	23	1997 - 2000	Midway Airlines	CRJ 200ER	3	2001
F/D 328 Jet	5	1999	Midwest Express	-	-	-
F/D 328 Jet	5	1999	Skyway Airlines	F/D 328 Jet	5	2001
ERJ 145ER	9	1998 - 1999	Trans State Airlines	ERJ 145ER	6	2000 - 2004

Compiled by MCG based on Airclaims, Autumn 2000 data

As is evidenced by this information, the deployment of RJs into the fleets of airlines that are likely to operate at Logan is quite significant. The future orders reflected above extend only to about 2005 for most of the airlines, but significant investment in regional jets is likely to continue. It is important to note that the Airclaims data is based on Autumn 2000 fleet information. Given the frequency of new RJ orders, these figures will now be dated but will illustrate that Massport's forecasts (all near term forecasts in the SDEIS/FEIR and the 37.5M High & Low Long-term and 45M High Forecasts) are obsolete since they do not reflect existing market data at Logan.

The aviation industry has changed substantially due to the introduction of RJs since the Airside Improvement Project's initiation in 1993.[9] At that time, Massport attributed significant delays to the presence of high levels of commuter turbo-prop operations. In 1993, RJs were not operating at Logan. But in April 2001, RJs account for 19.5% of passenger operations and based on the future acquisition of additional RJs, that percentage is likely to substantially increase.

It is quite relevant to the SDEIS/FEIR forecasts to note that the predominance of new aircraft purchases is for Canadian Regional Jets (CRJ) and Embraer Regional Jets (ERJ), not Dornier Regional Jets (DRJ). Of the information presented above, new DRJ aircraft is only 6% of the total new aircraft purchased, and are likely to be only 5% of the aircraft fleet of airlines serving Logan.

The introduction of regional jets in the national aviation system and at Logan is a significant change in the assumptions and analysis of the Supplemental Draft Environmental Impact Statement/ Final Environmental Impact Report (SDEIS/FEIR). The SDEIS/FEIR includes only one scenario reflecting the RJ fleet, and this named the 37.5M High RJ Fleet in the long-term forecasts. The near term forecasts for 29M passengers only reflect minimal RJ activity in the low and high fleet forecasts. Logan has not yet reached 29M passengers but there is substantial RJ activities on-going at Logan.

Based on the OAG for March 2001[10], the current RJ mix at Logan (as a percentage of the total RJs) is 54% ERJ, 25% CRJ and 21% DRJ. The future fleet mix is likely to have fewer DRJs since the only airlines that currently use DRJs are Atlantic Coast Jet, Midwest Express, and Skyway Airlines. Atlantic Coast Airlines, Atlantic Coast Jet, and Skyway Airlines do have orders for future DRJs but compared to existing and future fleets of ERJs and CRJs, gains in DRJ use is likely to be minimal.

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[9] *Logan Airside Improvements Feasibility Study – Phase 1 Report was prepared July 20, 1995 which used 1993 as the "existing baseline as it was the latest full year of operations when the study began" (page I-13), Jason M. Cortell & Associates, Inc.*

[10] *Percentage for RJ use based on calculated total operations estimated from OAG March 2001 activities.*

Massport, in their long-term 37.5M High RJ Fleet has estimated the RJ mix as follows: 55% ERJ, 24%DRJ, and 21% CRJ. If this mix was for the near-term forecast for 29M – it would be acceptable (however Massport's near-term forecasts only include 3% RJs for the 29M Low Fleet and 0.6% RJs for the 29M High Fleet), but the long-term forecast is for the year 2015 with 37.5M passengers and has not accounted for the significant purchases of ERJs and CRJs currently on-going by airlines serving Logan. Massport has overestimated the percentage of DRJs in their analysis.

Why is the fleet composition percentage of RJs important? Because the model[11] that Massport uses to calculate the environmental impacts and the delay reduction of the proposed runway 14-32 treat DRJs differently than CRJs or ERJs as is shown in Table 3.

Table 3
Model Assumptions Regarding RJ Use of Runway 14-32

1) DRJs are assumed to land and takeoff on proposed runway 14/32,
2) CRJs are assumed not to use proposed runway 14/32 at all, and
3) ERJs are assumed to land during dry conditions (not wet conditions) and not takeoff on proposed runway 14/32.

A reasonable person could argue that if the future RJ composition by manufacturer was similar to the percentages listed in Table 1 and thus echo the likely RJ fleet mix of airlines serving Logan, one could reasonably assume an RJ fleet composition of 45% CRJ, 47%ERJ, and 5% DRJ, and 3% other RJ types serving Logan. If this is the case, then the proposed runway will serve many fewer aircraft than Massport has assumed in their modeling.

[11] *Models for the 37.5M High RJ Forecast*

Input from RJ Pilots and Air Traffic Control Personnel

A screening analysis was conducted by Massport, in the DEIS/DEIR, to determine the appropriate length of proposed Runway 14-32 in order to serve the commuter airlines, primarily composed of turboprops. A length of 5,000 feet was chosen. However, a concern regarding whether RJs will indeed use a 5,000-foot runway was identified through the FAA SDEIS panel process. FAA hired an independent consultant, Jim Muldoon, to address the question: Will the 5,000 ft. length proposed for Runway 14-32 be adequate for the RJ's assumed in the Logan forecast? The results of Mr. Muldoon investigation[12] led to the model assumptions described in Table 3.

Independent of Mr. Muldoon's and Massport's analysis, additional input into as to whether RJs will use a 5,000 ft. runway has been sought from air traffic controllers and RJ pilots. Based on conversations with air traffic control tower personnel conducting air traffic operations at Philadelphia International Airport (which has both a 5,500 ft and 5,000 ft. runway), Ronald Reagan National Airport (which has a 4,911 ft. runway), and Norfolk International Airport (which has a 4,876 ft. runway), pilots of regional jets aircraft (specifically CRJ and ERJ types) prefer to use longer runways rather than the shorter (around 5,000 ft. length). Air traffic control procedures direct them to the smaller runway, and the pilot decides whether or not to land on the shorter runway. Although the tower personnel indicated that CRJs and ERJs have landed on the shorter runways, their preferences – based on the runway selection they have historically made – is for the longer runway.

Discussions with several regional jet pilots have also pointed out pilot perspectives regarding the desirability of using a 5,000 ft. (+/-) runway that echoes the air traffic controller's experience of CRJ and ERJ pilots requesting longer runways. The RJ pilots we interviewed (a CRJ Instructor Pilot for Atlantic Southeast Airlines and an ERJ 145 Captain for Continental Express Airlines) indicated that they and their associate pilots prefer using a longer runway than 5,000 ft., even if it means getting in a queue for landing or takeoff.

Both pilots indicated that they (the airline) are considered "on time" if they pull away from the gate on time. If they have to circle to queue to use a longer runway for landing, they will do so instead of taking the offered shorter runway. If they are delayed due to air traffic control holds, capacity constraints, weather or other reasons, that is not considered to be an "airline matter," as long as he has left the gate "on time."

The interviewed pilots have indicated that when they must use a shorter runway (i.e. 5,000 ft. runway) for takeoff or landing, everything must be precisely "on the numbers" and if, for example they need to execute a "go-around" because everything was not perfect, then they will.

[12] *Paper written by Jim Muldoon contained in Appendix C of SDEIS/FEIR dated February 21, 2001*

Pilots have indicated that they will use a shorter runway as long as capacity conditions allow such flexibility as "go-around"; however at higher trafficked airports, they will request a longer runway for both landings.

The Atlantic Southeast Airlines pilot indicated their on-board computer doesn't contain runway data on any airport with less than a 6,000 ft. runway. However, they operate on the principle of "as long as you can perform it safely," so it is left to the pilot's discretion to choose the runway it will operate. The Continental Express Airlines Captain spoke about using the Embraer performance charts provided by the manufacture only with a "comfortable margin" to allow for braking distance. Both of these pilots indicated that though they have landed on short (5,000 +/- ft.) runways, their preference is for a longer runway.

In a letter from Glenn Morse[13], Senior Director Industry Affairs of Continental Airlines to the Solomon Balra, Director, Cleveland Hopkins International Airport, Mr. Morse states "Regardless of the regulatory landing distance requirements, the ultimate decision to use a runway rests with the Pilot in Command. This decision will be based on ambient conditions, aircraft capability, pilot experience and familiarity, and ultimately, pilot "comfort level.""

Thus, based on conversations with CRJ and ERJ pilots, and the observations of air traffic controllers at airport with runways around 5,000 ft in length, it is likely that the model assumptions shown in Table 3 overestimate the use of proposed Runway 14-32 for landings by the ERJ series. Again, this makes the resulting environmental and operational analysis invalid in the SDEIS/FEIR.

RJs and Cargo

The increase use of regional jets in the Logan market may also have an affect on cargo activity and operations at Logan. Since RJs do not have substantial capacity in the "belly" of the aircraft, that mainline jets do, the amount of cargo carried on RJs is very limited. Thus, if the existing and growing future demand for cargo must be satisfied at NE's primary cargo airport, Logan, additional cargo-only operations are likely to occur to meet the cargo volume demand that can not be accommodated on RJs and other mainline aircraft. Massport's 37.5M High RJ fleet does not appear to account for this effect of RJs on cargo operations.

[13] *Letter dated April 12, 1999 to Solomon Balra, Cleveland Hopkins International Airport from Glen Morse, Senior Director Industry Affairs regarding minimum runway lengths – Phase I (interim) Runway 5L/23R, page 4.*

Conclusion

Massport assesses that it has completed an analytic approach to establishing a range of potential future fleet scenarios. However, Massport has failed to recognize the impact of regional jets and operations on the future fleet mixes at Logan. Only one forecast (the 37.5M High RJ scenario), created solely due to requests of the FAA SDEIS Panel process, incorporates the dynamic changes as a result of integration of RJs in the market. However, this scenario only analyzed runway delay and not taxiway delay; and thus was not put through the same environmental impact analysis as the other five (5) forecast scenarios created by Massport.

The fleet forecasts (both short-term and long-term planning forecasts) seriously misrepresent the existing and future fleet composition of regional jets operations. This is of utmost importance to the modeling of the operational and environmental conditions of the proposed Runway 14-32 reflected in the SDEIS/FEIR since only limited RJ aircraft will be able to operate on a 5,000 ft. runway based on FAA's consultant hired to determine the utilization of proposed runway 32 at Logan International Airport.[14] The underlying model assumptions of operations are invalid; thus, the resulting analyses on the operational and environmental consequences of the Airside Improvement Projects are invalid as well.

The use of regional jets in the future fleet mix has a significant impact on the delay savings potential of proposed Runway 14/32 since it is likely that only DRJs, a small percentage of the future RJ fleet will be able to use proposed runway 14/32.

In the DEIR/DEIS,[15] Massport states "the proposed unidirectional Runway 14/32 is intended principally to serve the regional/commuter airlines." However, based on information provided by FAA's consultant in the SDEIS/FEIR,[10] discussions with air traffic control tower personnel at other airports that have 4,800 feet – 5,500 feet runways, and discussions with CRJ and ERJ-operating pilots, it is quite likely that only a small percentage of regional jets will use proposed Runway 14-32. Additionally, the volume of turbo-prop activity has and is likely to significantly decline leaving only commercial airlines using aircraft such as SAAB 340s, and Beech 1900s using proposed Runway 14-32. Cape Air's fleet of Cessna 402s can and do use Runway 15L-33R. Thus, based on this information the use of proposed Runway 14-32 would principally serve business jet (general aviation traffic) and commuter (turbo-prop) airlines.

[14] *See Appendix C of SDEIS/FEIR prepared by Jim Muldoon dated February 21, 2001.*
[15] *Page 3-8, DEIR/DEIS dated February 1999*

The following points summarize the main concerns of the SDEIS/FEIR as relates to Regional Jets:

- Near-term Forecasts do not reflect changed industry conditions concerning RJs
- Near-term forecasts do not "bracket" possible operations scenarios
- Long-term forecasts do not reflect changed industry conditions concerning RJs (with exception of new 37.5M High RJ forecast)
- Long-term forecasts, with 37.5 M High RJ forecast, do not "bracket" possible operations scenarios
- 37.5M High RJ forecast not analyzed in same details as remainder of forecasts
- Peak Period Pricing as modeled not shown as effective for 37.5M High RJ forecast but numbers "fudged"
- Percentage of DRJ fleet in 37.5M High RJ scenario over estimated – resulting in overestimation of use of proposed Runway 14-32
- CRJ and ERJ pilots likely to request longer runway for landing since 5,000 ft does not provide "comfort" level
- Massport has overestimated the use of proposed Runway 14-32 by ERJ aircraft
- Increase use of RJ's may impact long-term Logan forecasts for cargo

Most importantly, since forecasts do not reflect likely conditions in near term and long term because of RJ integration, the resulting operational models (delay reduction) and environmental models (noise, air quality/odors, environmental justice) are invalid since they are based on inaccurate and out-dated forecasting.

Letter 18

Community Advisory Committee Anastasia S. Lyman

Code	Topic 1	Topic 2	Comment	Response
18.1	Cumulative	Airport vs. Project	The simple statement of the problem is that Logan is not and never will be big enough to accomplish what its managers and users ask of it. Whether the aspect under consideration is ground access, noise and pollution, parking, or flight delays to name only a few, the only action that affords real promise of easing the manifold problems at Logan is reduction in use - in passengers, ground vehicles, and aircraft operations.	The FAA is committed to enhancing safety and increasing the efficiency of air travel by modernizing the air traffic control system and expanding the capacity of the national air transportation system. Logan is an important part of a national airport system. The FAA's goal is to respond to demand for air transportation as safely and efficiently as possible, and not to artificially constrain demand. The proposed Airside Improvements would increase the efficiency of the runway and taxiway system, allowing Logan Airport's runways and taxiways to meet demand with less congestion while also providing environmental benefits, such as increased use of overwater flight paths. Nevertheless, comparative operational and environmental analyses of the Preferred Alternative and a No Action Alternative are included throughout the Airside EIS Documents. These analyses indicates that a No Action Alternative would result in greater noise exposure at higher noise levels and higher levels of air pollution.
18.2	Cumulative	Airport vs. Project	The FAA and Massport seek to have the proposed Airside Improvement Project considered as a limited project addressing only airside delays and reduction of such delay...It is explicitly accepted that the Airside Improvement Project does not address all causes of delay and can reduce only a portion of those delays...the proponents seek to limit consideration of adverse impacts to only those directly associated with the Airside Improvement Project proposal. These limitations on the scope of the EIS/EIR should be rejected. The discussion, and the proponents, should address all causes of delay to passengers using Logan. The discussion, and the proponents, should address all the adverse impacts on the communities surrounding Logan of all the activities associated with the airport.	The NEPA analysis of the Airside Project looked at a range of delay reduction alternatives including Runway 14/32, various taxiway improvements, Peak Period Pricing, and reduced minimums. These specific improvement concepts evolved from prior studies including the FAA's Logan Capacity Enhancement Plan (October 1992); the Logan Runway Incursion Mitigation Plan/Taxiway Relocation Study (December 1993); the Logan Final GEIR (July 1993); and the Logan Airside Improvements Feasibility Study, Phase 1 Report, published in July 1995. These concepts were developed to address those causes of delay that Massport and the FAA can directly affect. Addressing all causes of passenger delay (aircraft mechanical problems, bad weather, etc.) is too broad a scope for a single study, even one as extensive and comprehensive as that undertaken for the Airside Project. Massport's Environmental Planning and Status Report (ESPR, formerly GEIR) process provides a cumulative impact analysis of Logan operations and presents ongoing and future mitigation efforts. The FAA considers this analysis when reviewing project-specific EISs such as this one for the Airside Project. Cumulative environmental impacts associated with the Airside Project, as opposed to the operation of Logan Airport, are addressed in Section 7.4 of the Supplemental DEIS/FEIR and in Section 2.3 of this Final EIS.
18.3	Cumulative	Airport vs. Project	The proposed Airside Improvement Program is the last substantial expansion of the airfield and of its physical capacity to handle aircraft that can be expected, ever. Whether or not passenger growth will grow significantly or to Massport's projections, without the intervention of demand management it is certain that growth will occur, delays will worsen, and the communities surrounding the airport will experience yet more noise and pollution.	The proposed Airside Projects at Logan Airport are designed to improve airport efficiency and better accommodate current and future levels of demand, but do not represent expansion. Long-term growth in air travel demand is a recognized worldwide phenomenon that results from economic and demographic growth. Massport has no control over the underlying determinants of aviation growth. Rather, the construction of unidirectional Runway 14/32 would prevent the significant drop in airfield capacity that now occurs during northwest wind conditions. From its implementation, the Preferred Alterative will produce significant delay savings and net environmental benefits and will continue to do so regardless of demand. Massport and the FAA will continue to support regional transportation solutions. Massport is moving forward with a demand management program at Logan with FAA cooperation.

Code	Topic 1	Topic 2	Comment	Response
18.4	Regional	Regional Study	...the imperative and the challenge to the FAA and Massport are to manage transportation demand. The approach must be on a regional basis at the least. This means to shift demand to the least-impacting means and methods of adequately addressing it...It means addressing the transportation/communication systems in the light of...long-term concerns about public and environmental health and habitat. it is time to initiate new measures or strengthen existing measures to address and reduce adverse impacts of Logan operations on its neighbors. These efforts are beyond the mandates of either the FAA or of Massport, but they are the decision makers/proponents of the Airside Improvement Project and managers of major elements in the regional communication/transportation system. They must continue and extend their work with regional and national bodies and interests to bring about these outcomes, and the further consideration of the Airside Improvement Project should be dependent on initial successes and sustained commitments in the broader field of concerns.	Several regional transportation studies undertaken in the early 1990s concluded that expanded roles for regional airports, high-speed rail and infrastructure improvements at Logan Airport were needed to meet the region's long-term intercity transportation needs. Federal, state and local agencies throughout the region share the goal of improving New England's transportation network and have already begun to work, both independently and cooperatively, to achieve that goal. Great strides have been made in the last decade. Regional airports have become meaningful alternatives to Logan Airport for certain market segments. Passengers traveling to and from New York can now choose high-speed rail over air travel. These are significant achievements that resulted from years of planning efforts involving many different agencies. Local airport authorities and the FAA were responsible for significant infrastructure investments at the region's airports. Through individual and cooperative efforts, the regional airports have attracted meaningful airline services and have increased their share of the region's travel demand. Massport has assumed operating responsibility for the Worcester Regional Airport, which is capable of handling more of the region's air travel. In just one year, Massport obtained new air services for the airport, which resulted in a two-fold increase in Worcester's passenger traffic. State governments have undertaken a number of road and commuter rail projects to improve access throughout the region and make regional airports more accessible. The Federal Rail Administration and Amtrak have implemented high-speed rail along the Northeast Corridor, the only active high-speed rail service in the nation. To further the role of regional airports, the FAA, Massport, the Massachusetts Aeronautics Commission, the other 5 New England states, the Manchester Regional Airport, and the Rhode Island Airport Corporation are conducting the New England Regional Aviation System Plan Update, an update of the 1995 New England Regional Airports Air Service Study. The System Plan Update will forecast long-term passenger and cargo demand for the entire region, identify operational capacity and environmental constraints to growth, and formulate strategies for maximizing regional airport use and creating a balanced and efficient regional airport network. Regional airport, aviation and transportation planning officials from each of the six New England states will participate in the study. While greater use of the regional airports and high-speed rail will provide relief to Logan Airport, these initiatives fail to address a significant source of Logan's airside delays. The proposed Preferred Alternative provides clear benefits at current and future traffic levels by reducing preventable delays that occur during northwest wind conditions. Northwest wind delays at Logan Airport, which inconvenience and create unnecessary costs for hundreds of thousands of air passengers each year, cannot be mitigated through regional alternatives. Refer to Section 3.1 of this Final EIS.
18.5	Runway 14/32	Delays	The principal argument advanced for this project is to reduce operational delays during weather conditions that require the sole use of RW 15R/33L for both takeoffs and landings...such conditions occur on average about 10 days per year or about 2 % of the time. By focusing on delays during Visual Flight Rules (VFR) conditions and during these limited periods of strong NW winds, Massport obscures and fails to address the overall problem.	Throughout the Supplemental DEIS/FEIR, it is stated that the runway reduces delays whenever northwest winds force Logan Airport operations to two or fewer runways (see page ES-10, 1-4, 3-7, 4-84, and others). Northwest winds occur approximately 37 percent of the time and are the predominant wind direction at Logan. In fact, the 33L/27 configuration is in use more often than any other runway combination at Logan (FAA FY01 1st Quarter Runway Use Statistics). While the delay reduction benefits of Runway 14/32 occur during good weather conditions, the delay analysis shows that construction of Runway 14/32 would reduce overall runway-related delays by 32 percent or 38,000 annual hours (under 1998 conditions). While VFR delays would be reduced by 69 percent and VFR

Code	Topic 1	Topic 2	Comment	Response
				northwest wind delays would be reduced by nearly 90 percent, the overall delay reduction of 32 percent clearly demonstrates the current need for the proposed airside improvements and the benefits that would be gained with construction of Runway 14/32.
18.6	Runway 14/32	Runway 33R/15L	While Massport claims that RW 14/32 would allow separation of all smaller planes from the RW 33L/27 configuration, it is reported that Cape Air has argued its aircraft, Cessna 402s, can and do use "short" RW 33R under high NW wind conditions, and could continue to do so even with the availability of RW 14/32. This suggests small planes can now be segregated from the remainder of the arrival/departure streams during those conditions, without the Airside Improvement Projects. The delay analysis should factor in that capability.	Cape Air's Cessna 402s do utilize Runway 33R for arrival when the airport is operating to the northwest, and this fact is reflected in all of the operational and environmental analyses of the Airside Project. It should be noted that in the year 2000 (according to Massport statistics), there were approximately 3,100 annual arrivals to Runway 33R, representing less than one percent of annual airport operations, and only ten percent of Cape Air's 31,000 annual operations.
18.7	Fleet Mix/Forecasts	Growth Projections	Passenger growth appears to be leveling off, generally consistent with national trends. This suggests that congestion should grow only slowly if at all. Massport projections show future passenger and operational demand far beyond the rational capacity of Logan and the systems serving Logan to accommodate in a reasonable manner, and the FAA accepts those projections!	Regardless of passenger growth, the 1998 analysis demonstrated that the proposed Runway 14/32 would provide clear benefits under existing conditions, reducing current runway-related delays by more than 30 percent. While Massport has adjusted its passenger demand forecasts downward to reflect slower growth due to regionalization, this slower growth does not suggest that passenger demand is "leveling off". Long-term growth in air travel demand is a recognized worldwide phenomenon that results from economic and demographic growth. This growth is still expected, and congestion is likely to increase with demand absent any improvements. As explained in Chapter 4, Section 4.2 of the Supplemental DEIS/FEIR, Massport's passenger growth projections assume that Logan Airport will serve 37.5 million passengers by the year 2015. This is consistent with the FAA Terminal Area Forecast of 37.1 million passengers in 2015. It should be noted that this comment on a leveling of passenger growth is contradicted by the CAC comment on Chapter 2 (Page 1, Chapter 2 comments), that states, "The growth in passenger demand continues unabated at Logan despite the existence and promotion of regional airports."
18.8	Alternatives	Schedule Management	It is further argued that neither the FAA nor Massport can exercise control over airline's scheduling or selection of aircraft types. This ...view ...of the role and authority of an airport operator...has recently been challenged by the Port of New York/New Jersey Authority and by the operator of the San Francisco International Airport. In San Francisco, United Airline has responded by rescheduling and redirecting flights. At LaGuardia International Airport in New York, the Port of New York/New Jersey Authority has unilaterally established a cap on total operations, which the FAA has declined to overturn. At other major airports, operators are reportedly voluntarily taking actions to reduce peak period congestion. The NEPA/MEPA process requires the FAA and Massport to address alternatives to the proposed project; clearly carrier discussions should be an alternative that is considered.	Federal constitutional provisions, federal aviation statutes and regulations, and contractual provisions related to Federal Airport Improvement Program grants prevent Massport from any control over airline prices, routes, and schedules. Congress has specifically forbidden airport operators from exercising any discriminatory action against any class of airport users. Major factors in airline competition are frequency of service and number of markets served, and Massport has limited ability to influence airlines to consolidate or eliminate flights to increase load factors or aircraft size. The DOT and FAA are currently examining the broader policy implications of demand management options at congested airports throughout the United States from both the local and national perspectives with the intention of developing a full array of public policy tools to develop a comprehensive aviation strategy that focuses on ways to reduce delays, improve capacity management, enhance competition, and promote the efficiency of the overall aviation system. As part of this national effort, Logan has been selected as one of three airports to serve as a case study for U.S. airport demand management strategies. Regardless, Massport has made an effort to influence airline behavior within existing constraints. For example, Massport incorporates a gate management policy into new lease agreements which encourages use of larger aircraft by ignoring regional jets and turboprops when considering minimum gate use standards.

Community Advisory Committee Anastasia S. Lyman

Code	Topic 1	Topic 2	Comment	Response
				As to the examples cited, while there was an agreement between San Francisco International Airport and United Airlines, the impacts of the agreement and the magnitude of the resulting benefits are still unclear. More importantly, Boston has no such single dominant carrier that could impact overall schedules and delays to the same degree. The FAA also recognizes that the situation at LaGuardia (LGA) is unique and different from Logan's. LGA has always had very high demand. In fact, this demand is so great that in 1969 Congress promulgated the High Density Rule (HDR), imposing slots controls at LGA and other congested airports. Until April 2000, these slot controls limited LGA to approximately 71 hourly operations, but the Wendell H. Ford Aviation Investment and Reform Act of the 21st Century (AIR-21) exempted certain flights from the HDR limit and provided for the HDR itself to expire in 2007. The immediate result of this action was that by October 2000, peak hour operations increased by nearly 50 percent and delayed flights more than tripled. Airlines had added 200 scheduled flights and planned to add 300 more by January 2001. Since LGA has only two runways, the peak activity of 104 hourly operations greatly exceeded the hourly runway capacity of 81 operations, and the airport was faced with complete gridlock if airlines added flights as planned. The Port Authority of New York/New Jersey (PANYNJ) attempted to impose a temporary moratorium on new flights at LGA and requested assistance from the FAA, which then imposed a temporary lottery system which has been successful in reducing delays while other demand management options are explored. At LGA, these demand management techniques are required to limit demand to the airport's practical hourly capacity of 81 hourly operations since airline over scheduling was exceeding these levels by over 20 operations per hour. In contrast, Logan has a three-runway capacity of approximately 120 hourly operations, and hourly demand does not typically exceed this level today. In its Section 61 Findings pursuant to the Massachusetts Environmental Policy Act, Massport committed to implementing an enforceable peak period pricing program, or an alternative demand management program with comparable effectiveness, for Logan Airport. The objective of this program will be to avoid or reduce delays associated with overscheduling of Logan Airport's available capacity in good weather conditions. The goal is to have a demand management program in place before overscheduling conditions occur at Logan Airport. The FAA acknowledges that Logan Airport is one of the nation's most delayed airports and that Massport has committed to and will propose to implement a demand management program to reduce overscheduling delays. The FAA expects that any such program that is proposed for implementation will be consistent with applicable Federal law.

Community Advisory Committee Anastasia S. Lyman

Code	Topic 1	Topic 2	Comment	Response
18.9	Alternatives	Demand Management	Demand management measures generally have not been but must be postulated and analyzed in this EIS/R process. Specifically, measures to limit numbers of operations (beyond and different from the Peak Period Pricing option considered) and/or to affect the types, qualities and capacities of aircraft, and other measures to address current and projected impacts and concerns must be considered. Massport admits that peak period pricing is not effective in high regional jet scenario, yet they have failed to analyze other demand management alternatives.	Section 4.7.2 of the Supplemental DEIS/FEIR demonstrated that peak period pricing would be effective in a high regional jet scenario, reducing runway-related delays by approximately 18 percent. While the analysis demonstrates that a $150 flat fee would have limited impact on regional jets, the detailed parameters for a Logan program that will effectively influence these aircraft will be specified at the time a demand management program is proposed for implementation. The FAA and DOT are currently examining the policy implications of demand management and intend to develop an array of public policy tools to focus on delay reduction, capacity management, and improved competition and efficiency. As part of this national effort, Logan has been selected as one of three airports to serve as a case study for U.S. airport demand management strategies. In its Section 61 Findings pursuant to the Massachusetts Environmental Policy Act, Massport committed to implementing an enforceable peak period pricing program, or an alternative demand management program with comparable effectiveness, for Logan Airport. The objective of this program will be to avoid or reduce delays associated with overscheduling of Logan Airport's available capacity in good weather conditions. The goal is to have a demand management program in place before overscheduling conditions occur at Logan Airport.
18.10	Runway 14/32	Flight Tracks	...unless steps are taken to ensure that both "15" and "14" departures are maintained over water until reaching 6,000 feet altitude, they should not be characterized as "over water"; and the plan for "32" arrivals shows more over flight of South Shore communities than is the case with "33" arrivals. Additionally, departure off of "14" are shown to turn inside the harbor and overfly close-in communities such as Dorchester, Mattapan, Jamaica Plain, Quincy, and Milton.	The flight track monitoring report in the 1999 ESPR for April 1999 through September 1999 indicates that approximately 90 percent of 15R jet departures cross back over shore at an altitude above 6,000 feet. Similar performance could be expected from Runway 14 jet departures. Furthermore, jet aircraft departing from Runways 15R and 14 cross land much further from the airport than jet departures from other runway ends. The Runway 32 arrivals follow flight paths parallel to those for Runway 33L. The Runway 14 flight tracks which turn inside of the harbor are commuter aircraft departures that are typically quieter than mainline jet aircraft.
18.11	Runway 14/32	Unidirectional Commitment	The measures proposed to ensure that the "unidirectional commitment" is permanent and will not be overturned, overridden or ignored are described in detail but are not ironclad, and the most effective of the suggested procedures required to institute or establish them are left for the future. The procedural and/or legal steps, measures or determinations, which would be required to reconsider and remove each of the proposed measures, should be presented. Only in this way may the communities judge for themselves the reliability and permanence of the assurances.	The discussion of the unidirectional limitation of Runway 14/32 set out in the Supplemental DEIS and Final EIS is intended to provide assurances by Massport and the FAA that this limitation will not be altered. Neither Massport nor the FAA have any plans or expectations that such a limitation will change. At the very least any future attempt to alter this commitment will require approval under both state (MEPA) and federal (NEPA) environmental permit requirements. In addition, once an agreement between Massport and appropriate governmental and/or other parties is concluded, as contemplated in Massport's Section 61 Findings commitments, Massport will not be able to alter its commitment to unidirectionality without the consent of the other parties to the agreement.

Community Advisory Committee Anastasia S. Lyman

Code	Topic 1	Topic 2	Comment	Response
18.12	PRAS	Utilization	There are three general issues regarding PRAS with which the FAA, Massport and the communities should be concerned and should address: The first is whether under conditions of increasing operations and congestion significant movement toward attainment of the current or any other PRAS goals is realistic, or whether in practice runway use combinations will be driven entirely or almost entirely by weather conditions during most of the principal operating hours. (MIT Aeronautics Professor Amadeo Odoni clearly stated his opinion, which is shared, that overall congestion and delay problems at Logan will worsen with time under any foreseeable circumstances.)	During very high demand periods, the controllers currently have little or no flexibility for runway selection and PRAS recommends an appropriate runway configuration given the extant weather, wind and demand. Unidirectional Runway 14/32 would give the controllers more flexibility and allow them to improve achievement of the annual PRAS goals and to provide short-term relief from overflights. With increasing demand and without Runway 14/32, the controllers will be forced to rely on the north-south operating configurations more and more. Section 4.3.4 of the Supplemental DEIS/FEIR demonstrates that the controllers have been improving conformance with respect to PRAS recommendations. Section 8.5 of the Supplemental DEIS/FEIR contains methods for more comprehensive monitoring of PRAS. These methods will be implemented along with the Airside Project.
18.13	PRAS	Runway Use	A presentation of an analysis of probable runway use for the major configurations during other than nighttime hours, comparing Alternatives 1A, 2 and 4 for the 37.5 million passenger "High Regional Jet " fleet scenario is recommended. The fleet mix should incorporate the best information and projections available regarding growth of "Regional Jet" operations and aircraft use and reduction in commuter turboprop aircraft. The analysis should base runway selection on (1) weather conditions including wind direction and strength as well as IFR/VFR conditions, (2) capacity, and (3) availability (no selection criteria based on PRAS goals). The results should be presented in terms of annual numbers and percentages of over flights by runway end or grouped by affected area...and be compared to PRAS goals.	This is precisely how PRAS operates, and how the 37.5M High RJ analysis was performed. First, the runways that cannot be used due to weather conditions or wind are eliminated. During daytime, the remaining available operating configurations are then ranked by decreasing capacity. If only one configuration has sufficient capacity, it is selected. If the demand exceeds the highest capacity available, the configuration with the highest capacity is selected. When more than one available configuration has sufficient capacity, a selection must be made using some specific criteria. In the case of PRAS, the selection is based on a weighted combination of annual runway end use goals, dwell, persistence, and controller workload for changing runways.
18.14	PRAS	Goals	The second issue is the continued reliance by FAA and Massport on PRAS goals established over 17 years ago by only eight (8) of the communities represented on the CAC (compared with 27 communities represented on the CAC), certainly under different conditions of aircraft types and performance and lower operations rates, and in some cases different operating procedures (e.g., RW 22 and 27 departure tracks). It remains unclear to us whether the data presented on growth and development within the affected communities is the best available data. Therefore, the question of whether meaningful changes have occurred in land use patterns and population densities or other demographics (e.g., ages of residents) should be reexamined. The existing PRAS goals did not take into account the presence of particularly sensitive land uses.	The overall PRAS objectives were established to maximize the use of Runways 15L/33R for overwater flights, and to reduce the noise exposure for most of the communities with the highest levels of noise. Specific goals were adopted by the PRAS Advisory Committee composed of representatives from Massport, the FAA, airlines, and twelve neighboring communities. These goals were designed to support the overall objectives based on the flight procedures then in effect (including the Runway 22R departure track), the population inside the 65 DNL contour, and noise sensitive areas. The 27 departure EIS was conducted later with full knowledge that PRAS was part of the controllers' standard operating procedure. Section 4.3.3 of the Supplemental DEIS/FEIR demonstrates that there have been no significant demographic changes to warrant an update of the PRAS goals, and this analysis is based on the best available land use data. Construction of Runway 14/32 would allow a more balanced geographic distribution of aircraft operations over populated areas, will increase the number of overwater operations, and will reduce noise exposure for close-in communities. Furthermore, the Supplemental DEIS/FEIR also demonstrates the more equitable balance of noise impacts among communities surrounding Logan Airport that can be achieved with the Preferred Alternative as opposed to the imbalance that occurs today and would worsen in the future if no action is taken.

Community Advisory Committee Anastasia S. Lyman

Code	Topic 1	Topic 2	Comment	Response
18.15	Noise	55dB DNL	The third issue, which is an issue in its own right as well as relevant to the selection of PRAS goals, is the selection and use of appropriate metrics for estimating and understanding the impacts of aircraft operations on the communities and individuals. There is a growing body of evidence...that exposure estimates relying on DNL calculations, projections and contours are inadequate to reflect and understand community reaction. The reliance by the FAA and Massport on the 65dBDNL contour as representing the limit of adverse impact is not appropriate. The appropriate level of exposure based on that metric, representing an acceptable residential outdoor noise environment is 55dBDNL (EPA and WHO (1999)). This is not the sole metric that should be applied nor is "total energy exposure" the sole approach to understanding and representing impact that should be considered by decision makers. We concur with and support the recommendations of the Hanscom Field Noise Work Group Report of 9/22/99 with respect to metrics and monitoring, and urge incorporation of those recommendations into the assessment of impact and of changes in impact resulting from changes in either the airfield or operating procedures.	The FAA as well as the Federal Interagency Committee on Aviation Noise (FICAN, a special government committee which includes among its members the U.S. EPA and HUD) recognize a DNL of 65 dB or above as indicative of significant noise impact, and the Preferred Alternative provides the opportunity to reduce noise exposure to the population exposed to the highest noise levels above DNLs of 75 dB and 70 dB. It is still the consensus of the scientific community in this country and much of the rest of the world that DNL remains the best descriptor of environmental noise, thus the Supplemental DEIS/FEIR and prior related documents incorporated DNL contours and population counts down to 60 dB, counts of people who experience different degrees of change in DNL, and DNL values as low as 20 to 25 dB caused by ground activity. In addition to DNL measures, the Supplemental DEIS/FEIR and prior related documents also included summaries of nighttime equivalent sound levels, changes in maximum sound levels, times above 5 threshold sound levels for nighttime hours and for 24-hour days, and equivalent sound levels as low as 20 to 25 dB caused by ground activity. Both Massport and the FAA believe it is most appropriate to reduce noise in the most heavily impacted areas first. Thus, the greatest noise benefit of Runway 14/32 is derived by reducing noise levels for those most heavily impacted (people within the DNL 70 dB and DNL 75 DB contours) and by shifting flights over Boston Harbor while reducing the total number of nighttime flights.
18.16	Alternatives	All Alternatives	The FAA and Massport have elected to compare impacts of the changes in operations (runway use, flight tracks, increases in operations, changes in the fleet mix) through comparing projections only of Alternatives 1A ("Preferred alternative") and 4 ("No Build"). In order to present a fair comparison of the effectiveness of alternatives, the Supplemental DEIS/FEIR should be expanded to include Alternative 2 ("All actions except RW 14/32", and including Peak Period Pricing) in all comparisons of effectiveness and impacts. Furthermore, each such comparison of future impacts and other changes should compare five scenarios; the 29 million passenger "Low Fleet" and "High Fleet" and the 37.5 million passenger "Low Fleet" "High RJ Fleet" and "High Fleet", with the most meaningful comparisons being those of the 29M Low Fleet and the 37.5M High RJ Fleet.	For the only new fleet analyzed in the Supplemental DEIS/FEIR, the 2015 High RJ Fleet, impacts for all alternatives are presented in the main body of the Supplemental DEIS/FEIR. While the main body of the Supplemental DEIS/FEIR does focus on the differences between Alternatives 1A and 4 for the remaining fleets, all alternatives (including Alternative 2) were compared in the Draft EIS/EIR for all of the fleets available at that time: the 29M Low, 29M High, 37.5M Low, 37.5M High, and 45M High. Furthermore, the Supplemental DEIS/FEIR includes the delay, noise, and air quality comparisons from the Draft EIS/EIR in Appendices C, E, and F, respectively. These Supplemental DEIS/FEIR tables allow direct comparisons of all alternatives and fleets analyzed previously in the Draft EIS/EIR.

Community Advisory Committee Anastasia S. Lyman

Code	Topic 1	Topic 2	Comment	Response
18.17	Peak Period Pricing	Implementation	Massport's proposed approach to demand management is too limited, too slow of development, would be initiated too late, and is too uncertain of implementation and of effect. Deferral of the development of a demand management approach and system until the need becomes apparent through monitoring, as Massport proposes, ensures that the conditions requiring its implementation will persist for years prior to any corrective action actually being taken. At this time, the most appropriate demand management/delay reduction program concept should be established, the requisite actions defined, and all necessary measures put in place ready for implementation at the appropriate time.	In its Section 61 Findings pursuant to the Massachusetts Environmental Policy Act, Massport committed to initiating the rule-making process to implement an enforceable peak period pricing program, or an alternative demand management program with comparable effectiveness, for Logan Airport. The objective of this program will be to avoid or reduce delays associated with overscheduling of Logan Airport's available capacity in good weather conditions. The goal is to have a demand management program in place before overscheduling conditions occur at Logan Airport. The FAA acknowledges that Logan Airport is one of the nation's most delayed airports and that Massport has committed to and will propose to implement a demand management program to reduce overscheduling delays. The FAA expects that any such program that is proposed for implementation will be consistent with applicable Federal law. The FAA is currently working with the U.S. DOT to establish national guidelines for demand management programs at U.S. airports. As part of this national effort, Logan has been selected as one of three airports to serve as a case study for U.S. airport demand management strategies.
18.18	Alternatives	PPP vs. 14/32	The implementation of Alternative 3 would provide significant delay reduction benefits without construction of the proposed runway, and the demand management strategy can be put in place in relatively short order and adjusted as appropriate. Should it prove insufficient, the construction of the runway could be reconsidered at that time.	Peak Period Pricing and Runway 14/32 are designed to address different causes of delay. Peak Period Pricing would target delays that result from airline overscheduling, while Runway 14/32 is designed to prevent delays that occur during northwest winds. Furthermore, Peak Period Pricing has been shown to have less benefit under near-term Low Fleet scenarios, while the proposed unidirectional Runway 14/32 reduces delays significantly under all scenarios. Massport has committed to implementation of a demand management program; however, this in no way should preclude or delay construction of Runway 14/32 as the two proposals affect very different causes of delay. In its Section 61 Findings pursuant to the Massachusetts Environmental Policy Act, Massport committed to initiating the rule-making process to implement an enforceable peak period pricing program, or an alternative demand management program with comparable effectiveness, for Logan Airport. The objective of this program will be to avoid or reduce delays associated with overscheduling of Logan Airport's available capacity in good weather conditions. The goal is to have a demand management program in place before overscheduling conditions occur at Logan Airport. The FAA acknowledges that Logan Airport is one of the nation's most delayed airports and that Massport has committed to and will propose to implement a demand management program to reduce overscheduling delays. The FAA expects that any such program that is proposed for implementation will be consistent with applicable Federal law. The FAA is currently working with the U.S. DOT to establish national guidelines for demand management programs at U.S. airports. As part of this national effort, Logan has been selected as one of three airports to serve as a case study for U.S. airport demand management strategies. It should be noted that the statement that "the demand management strategy can be put in place in relatively short order" contradicts the argument in the previous paragraph that, "Deferral of the development of a demand management approach and system until the need becomes apparent through monitoring, as Massport proposes, ensures that the conditions requiring its implementation will persist for years prior to any corrective action actually being taken".

Community Advisory Committee Anastasia S. Lyman

Code	Topic 1	Topic 2	Comment	Response
18.19	Capacity	Increased	Massport sees new high-capacity 3-runway combinations resulting from the construction of 14/32, thereby increasing average airfield capacity. The project is not capacity neutral. Thus with 14/32, the only Visual Flight Rules (VFR) conditions when a 3-runway combination would not be available would be strong NW or SE winds creating an excessive crosswind component on 9/27. Under that condition a 2-runway combination would be available (actually, 2 major runways plus the short 15L/33R, used by small propeller AC). The new runway is clearly an increase in the average and minimum VFR capacities of Logan Airport, and should be discussed, described and evaluated as such.	By preventing the drop in capacity that currently occurs when northwest winds force Logan to operate to the northwest, Runway 14/32 will increase the amount of time that Logan Airport can operate on three runways. It will therefore increase the average capacity of the airport. It will not, however, increase Logan's normal three-runway capacity of approximately 120 hourly operations that is available around 80 percent of the time. This capacity level is consistent with the FAA's Airport Capacity Benchmarking Report 2001, which states that Logan's good weather capacity is between 118 and 126 hourly operations and that construction of Runway 14/32 will not increase this capacity. Making Logan's normal three-runway capacity level available more often increases the reliability of the airport and reduces delays. Since Runway 14/32 will not increase Logan's normal three-runway capacity, it will not increase aircraft operations or aircraft emissions. In fact, a comparison of the Preferred Alternative and the No Action Alternative for future demand levels shows that the Preferred Alternative results in slightly lower aircraft emissions and reduced noise for the most highly impacted populations in the 75dB and 70dB DNL contours. Refer to Section 3.7 of the Final EIS for more information. The statement that strong NW or SE winds are the only VFR conditions when a 3-runway combination would not be available is inaccurate. Strong NE or SW winds can also make Runway 9/27 unavailable, restricting operations to 4L/22R and 4R/22L. It is even possible for strong E or W winds to restrict operations to Runway 9/27 only. Strong winds can occur in any direction and limit the use of crosswind runways. At Logan Airport this occurs most frequently with winds from the northwest.
18.20	Capacity	Airside	Only one runway use combination (4L/R arrivals, 4L/R and 9 departures) has a capacity of 120 operations per hour, and then only under the most favorable of Visual Flight Rule conditions (VAPS). Under slightly less favorable VFR conditions (BVFR), the capacity of that runway combination drops to 118 ops/hr, and decreases further to 68 ops/hr under the least favorable VFR conditions. It's important to note the capacity calculation assumes departures on 4L over Bayswater St., which is (effectively) embargoed for jets. In the first quarter of 2000, 16% of non-jet departures used that runway. Another runway use combination, 4L/R arrivals with 4R/9 departures (which is also a more representative configuration and capacity measure in a fleet with continually decreasing percentage of non-jet AC) has a VAPS capacity of 108 ops/hr, dropping to 107 under BVFR conditions.	The capacities presented in this comment from the Logan Airside Improvements Feasibility Study represent "operational" capacities, which have been reduced by 10 percent from the maximum modeled throughputs which are used to calculate delays. It should also be noted that while the maximum capacity configuration is only available under VAPS conditions, these conditions persist approximately 78 percent of the time at Logan. While the comment states that the capacities without 4L departures are a better representation due to the declining percentage of non-jets, this is not true, and it is misleading to base that assumption on the fact that only 16 percent of non-jet departures used 4L in the first quarter of 2000 (according to the Massport Noise Abatement Office, 26 percent of non-jet departures used 4L in March 2000). None of the modeling assumed 4L jet departures, so the existing noise rules are reflected in all modeling scenarios, both historic and future. For example, in the 29M Low scenario, there were 24 hourly departures on 4L, while in the 37.5M High RJ scenario, there were only 10 hourly non-jet departures on 4L. While the use of 4L dropped by 14 hourly operations with the decline in non-jets, the total capacity of the configuration dropped by only seven operations, indicating that the increased percentage of jet departures could be accommodated on other runways. The changing fleet mix and its resulting impact on capacity and delay is captured by the detailed operational modeling process and is reflected in all of the modeled environmental impacts.

Code	Topic 1	Topic 2	Comment	Response
18.21	Capacity	Airside	The runway use combination of 33LR arrivals, 33L & 27 departures, has a VAPS capacity of 77 ops/hr (note that 33R is used only for non-jet arrivals, and basically only by Cape Air and perhaps a few GA's). But, add RW 14/32, and the combination of 33L & 32 arrivals, 33L & 27 departures, under VAPS and BVFR conditions, increases to 107 ops/hr from 77, becoming the 2nd highest capacity runway configuration. Thus, the average maximum VAPS capacity of the airfield, based on an unweighted average of those 3 runway combinations (4/9, 22/27, and 33/32/27) would be 110 operations per hour under the preferred alternative, construction of RW 14/32. The runway use combination of 33L/R arrivals, 33L departures (strong NW winds) has a VAPS capacity of 53 ops/hr. Adding RW 32 to the configuration 33LR arrivals and 33L departures enhances the capacity of that combination only from 53 to 61 ops/hr under VAPS conditions.	The addition of Runway 14/32 will increase the average capacity of the airfield, but will not increase the typical three-runway capacity of approximately 120 hourly operations. However, it is incorrect to take an unweighted average (excluding weather and other operating restrictions) of the VFR capacities and use the numbers as the basis for determining VFR capacity at the airport. The availability of each runway configuration given crosswind and tailwind limitations must be evaluated, as well as other operational restrictions such as noise rules and approach minimums. All of this information was included in the operational modeling of the proposed improvements.
18.22	Capacity	Airside	Runway utilization statistics unadjusted for nighttime operations are not available in the SDEIS. Recent runway utilization statistics distributed by the MPA Noise Abatement Office show that the highest capacity runway combination was utilized about 1/3 of the time, and the combination of arrivals on 27 and 22L with departures on 22LR with a capacity of 103 ops/hr was also used about 1/3 of the time. The average maximum capacity of the remaining 10 significant runway combinations is 72 ops/hr, and those combinations are assumed to be used the remaining 1/3 of the time. On that basis the average VAPS (best VFR conditions) capacity of the airfield is currently about 98 operations per hour. That in our judgment is a much more appropriate estimate of peak hourly capacity of the airfield than the 120 ops/hr used in the Supplemental DEIS/FEIR, and the average capacity is significantly lower because operating conditions are less than the optimum VAPS condition a significant portion of the time. As we point out, while the SDEIS states the VFR capacity of the airfield is 120 ops/hr, that capacity is currently reached (a) only under the most optimum conditions, (b) on only one runway combination, and (c) on that runway combination only with a fleet having a high percentage of non-jet AC.	Unadjusted runway use statistics for the 37.5M High RJ Fleet (all alternatives) were presented in Appendix C of the Supplemental DEIS/FEIR. Unadjusted runway use statistics for the other fleets and alternatives were included in Appendix H of the Draft EIS/EIR. It should also be noted that the Noise Office Statistics present the percentage of operations using a given runway end rather than the percentage of time that a runway configuration is used, so it is unclear how the presented use was determined. According to FAA statistics for October through December 2000, Arrive 4L/R - Depart 4L/R & 9 was used 19.8 percent of the time, Arrive 22L & 27 - Depart 22L/R was used 23.1 percent of the time, and Arrive 33L/R - Depart 33L & 27 was used 25.0 percent of the time. The capacity analysis presented in this comment is also misleading, as it uses statistics on runway capacity and compares them with statistics on runway use. It is extremely important to understand that configuration use does not directly reflect configuration availability. For example, during low demand periods, a high-capacity configuration may be available but not used. There are often clear, calm conditions during nighttime hours when Logan Airport uses the preferred nighttime configuration of arrivals on 33L and departures on 15R, even though this configuration has a capacity of approximately 20 operations and higher-capacity configurations are available. Because of low demand periods, the weighted average of the hourly capacities of the configurations used is always less than the weighted average of the maximum capacities available at any time. As a numerical example, consider the DELAYSIM analysis of the 29M Low No Action scenario. Since the numbers presented in the comment represent operational capacities, average operational capacities will be presented (recall that these are 10 percent lower than the full modeled capacity used for delay calculations). Analyzing the configurations selected in each hour over the course of the ten-year weather file, the average operational capacity of the airport is approximately 79 hourly operations (81 if only VFR conditions are considered). However, when the maximum available capacity is considered (while still obeying all noise, wind, and other operational restrictions including giving nighttime configurations priority over daytime configurations), the average operational capacity of the airport is 102 hourly

Code	Topic 1	Topic 2	Comment	Response
				operations (107 under VFR conditions). Note that if the operational capacities are converted to full modeled capacity (removing the 10 percent buffer), the resulting average VFR capacity of the airfield is approximately 120 hourly operations (119 to be exact). This capacity represents all VFR weather conditions and all VFR runway combinations.
18.23	Capacity	Airside	With the addition of RW 14/32, a runway combination of arrivals on RWs 33L, 32 and 27, with departures on 33L and/or 27, with a capacity under optimum conditions of 107 ops/hr, becomes available about 1/3 of the time. This increases the reliable capacity of the airfield under optimum VFR conditions from 98 to 110 operations per hour, an increase in capacity of over 10%. We feel that constitutes capacity enhancement, which should require a further level of review.	Referring to the previous comment (18.22) and this one, if 4L/R&9, 22L/R&27, and 33L/32/27 were each available 1/3 of the time, the airport would always have a 3-runway configuration available, which is clearly not the case. While 33L/32/27 does increase the availability of the three-runway configurations, it does not increase the typical three-runway capacity of the airport of approximately 120 hourly operations. The 107 operations per hour presented for the 33L/32/27 configuration is an operational capacity, which is equivalent to approximately 120 hourly operations when converted to the full modeled capacity.
18.24	Peak Period Pricing	Threshold	The approach proposed by Massport is to set a "trigger" level of the 3-hour running average of scheduled operations equal to 110 ops/hour. The first difficulty with that approach is setting the "trigger" at a level higher than the current average maximum capacity of the airfield and at the projected future maximum capacity of the airfield that would result from the "preferred alternative". Because of the "exemption" element of the Massport proposal, because the results of the approach cannot be reliably determined in advance, and because (admittedly, by Massport) the replacement of non-jet smaller commuter aircraft by "regional jets" less sensitive to a flat surcharge will lessen the impact of the fee, the "trigger" must be set significantly below the goal level by at least 10% initially. The second difficulty is that Massport has chosen the number 110 operations per hour as that "trigger" level...the reliable number of scheduled hourly operations above which delays will assuredly occur at least 1/3 of the time is under 100 operations per hour for the current airfield configuration. The "trigger", should be set at no more than 90 ops/hr. If RW 14/32 were constructed... the "trigger" should be set at about 100 ops/hr. (With advances in instrumentation, such as the implementation of a GPS-based system, this capacity could potentially be attained under IFR conditions as well.)	As explained in the Responses to Comment 18.22, the full modeled capacity of the airfield under VFR conditions is approximately 120 hourly operations under the 29M Low No Action scenario. This is higher than the "trigger" level of 110 operations per hour, and therefore accounts for the factors described in the comment (the exemptions, the uncertainty of the results, and the replacement of non-jets). It was assumed for all of the Airside analyses that independent approaches to Runways 33L and 32 would not be available under IFR conditions, but if GPS made this capacity available under IFR, additional delay reduction benefits could be realized. The FAA Capacity Benchmarking Study states that both VFR and IFR weather capacities at Logan Airport will increase by approximately 4 percent over the next ten years due to technological and procedural improvements, but does not assume that the highest VFR capacities will be available under IFR conditions.

Community Advisory Committee Anastasia S. Lyman

Code	Topic 1	Topic 2	Comment	Response
18.25	Alternatives	All Alternatives	The decision to conform and present the Supplemental DEIS/FEIR as a "companion piece" to the DEIS/R presents the reviewer with the challenge of continually checking back through the four volumes of the latter. This is not only tedious, it is often confusing, and can lead to misinterpretation of topics and presentations. Throughout the Report, the impacts of Alternatives 1, 1A, 2/3 and 4 should be directly compared, and where references to materials previously published is required or appropriate the materials should be clearly referenced.	Comment noted. Presenting the Supplemental DEIS/FEIR as a companion document was intended to make the document more readable and understandable, particularly since the results could be more clearly presented if the number of fleets and alternatives described was reduced to the most likely future fleets and the Preferred and No Action Alternatives. The Draft EIS/EIR described 5 project alternatives (Alternatives 1, 1A, 2, 3, and 4) for five future fleets (29M Low, 29M High, 37.5M Low, 37.5M High and 45M High) in addition to 1993 base year conditions. This amounted to 26 different fleet/alternative scenarios. The Supplemental DEIS/FEIR added an additional fleet, the 37.5M High RJ fleet, for which all project alternatives were analyzed and updated the base year to 1998 conditions. If the results for all of the fleets and scenarios from the Draft EIS/EIR were repeated in the Supplemental DEIS/FEIR, there would have been a total of 32 different fleet/alternative scenarios, which would have been a less effective way to present the information.
18.26	Noise	Discrepancies	Fig. 6.2-9 appears to contain an error, comparing the 1998 No Action DNL contours with the 29M Low Fleet Alternative 1A contours instead of the 29M Low Fleet No Action contours.	The comment appears to be in error. Figure 6.2-9 accurately depicts the 29M Low No Action alternative shown in red. This can be checked by also referring to Figure 6.2-7 (in which the 29M Low No Action alternative is shown in black) and examining several key locations, such as where the 60 dB DNL contour crosses Route I-93 in South Boston or where the 65 dB DNL contour crosses Route 1 in Chelsea.
18.27	Noise	Contours	However, the DEIS/FEIR completely fails to present comparable information for the other three alternatives. The noise contours in the DEIS/R, which do provide information for all alternatives, are a much less clear presentation and are based on outdated information. It is not feasible to make side-by-side comparisons of all alternatives. While this serious shortcoming could be corrected in the subsequent FEIS, it is a major inadequacy of the FEIR, which for that reason alone should be found inadequate.	As indicated in the Preface to the Supplemental DEIS/FEIR, the document is, by its nature, supplemental information that builds upon data and analyses presented in the Draft EIS/EIR. It is to be reviewed in conjunction with that earlier document. Only certain key information is brought forward into the Supplemental DEIS/FEIR to aid in addressing specific issues raised during the SDEIS Panel review and by the Massachusetts Secretary of Environmental Affairs.
18.28	Alternatives	Demand Management	This chapter clearly shows the adverse impact on delays and congestion created by the high percentage of small "commuter/regional" turboprop aircraft, carrying less than 10% of passengers but resulting in over 40% of total operations. The immediate focus of delay reduction measures should be to substantially reduce this gross disparity in the use of the airspace. If only half of passengers on commuter flights are connecting to other Logan flights (Section 1.3. 1), and airlines are actively increasing operations at other airports, an opportunity exists to divert commuter operations. In addition, measures to ensure that the future fleet mix remains consistent with the "low fleet" scenario should be presented and implemented. A new Origin and Destination study of passengers in these aircraft should be undertaken to better assess the potential for diversion of that traffic to other airports and other modes.	While Logan does have a high percentage of non-jet aircraft, these aircraft play an important role, providing small communities with access to the national air transportation system. An examination of Logan Airport's 10 largest turboprop markets for fiscal year end second quarter 2000 (latest available data) indicates that 51 percent of the passengers on these flights are connecting passengers. Most of the connecting passengers for these markets are from small New England and upstate New York communities that must transfer to another flight at Logan Airport to reach their final destination. For example, 71 percent of the passengers on Logan-bound regional carrier flights from Bangor connect onto other flights at Boston. Other markets with a high share of connecting passengers include: Portland (78 percent); and Burlington (63 percent). Considerably more service development must occur at the regional airports before any of these services could be moved from Logan. Additionally, several of Logan Airport's top turboprop markets have a high percentage of local passengers: Rochester (85 percent); Syracuse (72 percent); and Westchester County (84 percent). These are relatively small air passenger markets that airlines choose to serve from Logan Airport, because Logan Airport is closest to the largest concentration of demand - the City of Boston. It is unlikely that any of these regional carrier flights could be transferred to regional airports since they do not offer the same convenient access to Boston, New England's most populous city and its largest business and cultural center. The FAA, Massport, the Massachusetts Aeronautics Commission, the other 5 New England states, the Manchester Regional Airport, and the Rhode Island

Code	Topic 1	Topic 2	Comment	Response
				Airport Corporation are conducting the New England Regional Aviation System Plan Update, which will assess the potential for additional diversion from Logan. The study will forecast long-term passenger and cargo demand for the entire region; identify operational, capacity, and environmental constraints to growth; and formulate strategies for maximizing regional airport use and creating a balanced and efficient regional airport network. It should also be recognized that not all non-jet operations negatively impact the airport, and that reducing non-jet operations does not result in delay reduction for jet operations under all conditions. Because of Logan's airfield layout, some non-jet services are desirable. These non-jet aircraft do not use the same runway/airspace capacity as jet aircraft under good weather conditions, so removing a non-jet operation does not necessarily mean that a larger jet operation could utilize the freed capacity. An obvious example is use of 4L departures or 22R arrivals, as noise rules prevent jets from using this capacity. Removing a non-jet from these runways does not necessarily reduce delays for passengers on jet aircraft. While Logan will always support some non-jet activity, Massport recognizes that movement towards a "high fleet" scenario with significant non-jet activity could result in a large increase in delays due to airline overscheduling. In its Section 61 Findings pursuant to the Massachusetts Environmental Policy Act, Massport committed to implementing an enforceable peak period pricing program, or an alternative demand management program with comparable effectiveness, for Logan Airport. The objective of this program will be to avoid or reduce delays associated with overscheduling of Logan Airport's available capacity in good weather conditions. The goal is to have a demand management program in place before overscheduling conditions occur at Logan Airport. The FAA acknowledges that Logan Airport is one of the nation's most delayed airports and that Massport has committed to and will propose to implement a demand management program to reduce overscheduling delays. The FAA expects that any such program proposed by Massport will be consistent with applicable Federal law. The FAA is currently working with the U.S. DOT to establish national guidelines for demand management programs at U.S. airports. As part of this national effort, Logan has been selected as one of three airports to serve as a case study for U.S. airport demand management strategies.
18.29	Cumulative	Airport vs. Project	Under the "preferred alternative", forecast delay hours increase from 50% to 300% in the out years, a bit less if Peak Period Pricing is incorporated into the forecasts. Noise and other environmental impacts will increase in the future to and beyond the levels projected for even the "no-action" alternative. A formal airport master plan for Logan, performed by almost all commercial service airports, should be required of Massport in order for the impacted communities to understand what Massport plans to do with this critical dilemma over the next 20 years.	The Airside EIS is a planning project that will conclude in an airport layout plan (ALP). The Preferred Alternative development will be depicted on an ALP that will represent needed improvements at Logan Airport for the foreseeable future. Massport continually engages in short and long-term planning for Logan Airport to improve efficiency. The context for these planning efforts are reviewed in the ESPR/EDR process. In fact, the identification of elements of this project was initiated as a planning process and the early stages were subject to both state and Federal environmental requirements.

Community Advisory Committee Anastasia S. Lyman

Code	Topic 1	Topic 2	Comment	Response
18.30	Delay	Cost of Delay	It is stated that the current level of delay results in $300 million in annual cost to airlines and air passengers. Whether or not this value is even close to correct, it is not relevant. Both airlines and passengers accept or tolerate these costs, as they do the costs of delay in highway traffic. They may grumble, but they keep doing the same thing. Further, there is no effort to contrast those "costs" to the costs borne by the residents of the communities impacted by Logan operations. Also, in this case, every minute of modeled delay is being counted (including that of cancelled flights) rather than delays over some realistic threshold such as the 15 minute threshold used by the FAA.	The cost of delay analysis presented in the Draft EIS/EIR and the Supplemental DEIS/FEIR was based on a methodology recommended in FAA APO Bulletin APO-97-1. All FAA and DOT delay statistics show that Logan Airport is consistently one of the most delayed airports in the nation, and this level of delay imposes significant costs on passengers and airlines that are not acceptable. The Preferred Alternative provides significant delay reduction benefits under all current and future scenarios, and also reduces the environmental impacts of Logan Airport by reducing the number of people exposed to the highest noise levels above 70 and 75 dB DNL, by shifting flights over Boston Harbor, and by reducing aircraft emissions. The delay costs presented were provided to serve as an indicator of the magnitude of Logan's delay problem and to provide context. As to including every minute of delay, this is an accepted practice in calculating costs. Using the FAA's 15-minute threshold to calculate the costs associated with delays would be somewhat arbitrary, as costs associated with a delay of 15.01 minutes would be counted while those associated with a delay of 14.99 minutes would not. Similarly, the delays due to cancelled flights are certainly incurred by passengers and should be considered. The Preferred Alternative was chosen because it will reduce delays and will provide environmental benefits compared to the No Action Alternative.
18.31	Delay	Cost of Delay	Since the "preferred alternative" of the Airside Improvement Project will not eliminate delay, the estimate should be of the cost avoided by the proposal.	The costs presented in Chapter 1 of the Supplemental DEIS/FEIR represent the costs of delay in 1998, not the costs saved by the proposed improvements. Page 1-41 of the Supplemental DEIS/FEIR clearly states, "The hourly cost of delay can be applied to the estimated hours of delay reduction that will result from the various Airside Project Alternatives, in order to quantify the benefit associated with each."
18.32	Noise	Noise Rules	Fig. 1.2-2 (page 1-10) shows departures from RW 4L. The application of the Massport noise rules to departures on 4L and arrivals on 22R should be explained, including the method of measurement of the noise limit. The types of aircraft that can meet the landing and departure noise limits at this time should be indicated, for both near-term and long-term forecasts. (Note: This rule changed, from aircraft weight to noise limits.)	While Figure 1.2-2 indicates that departures occur on Runway 4L, all of the modeling incorporates Massport's noise rules. Takeoffs from Runway 4L and landings on 22R are prohibited between the hours of 11PM and 6AM, and during other hours, takeoffs from 4L are limited to aircraft with a takeoff noise emission level of 73 dBA or less while arrivals to 22R are limited to a landing noise emission level of 78 dBA or less. These noise levels are the landing or takeoff noise levels as published in the most recent FAA Advisory Circular (36-3G), and the methods of measurement are described therein. These rules have been in place since July 1, 1986. The FAA's approach to implementing Massport's noise rule on that runway is to limit the departures to turboprop aircraft of specific types. The November 1998 version of FAA Boston Control Tower Order BOS TWR 7040.1F allows 4L departures by the following types: Dornier DO82, Embraer E110, Beech BE02 and BE99, DeHavilland DH7 and DH8, Saab SF340, Shorts SD3 and SHD6, Aerospatiale AT42, Jetstream BA31, and Swearingen SW3 and SW4. The same order allows 22R landings by the Dornier DO82, the Embraer E110, the Beech BE02 and BE99, and the Jetstream BA31 while specifically excluding the DeHavilland DH7 and DH8, the Saab SF340, the Shorts SD3 and SHD6, the Aerospatiale AT42, and the Swearingen SW3 and SW4. Annual analyses of ARTS radar data saved by Massport's noise and operations monitoring system have, for years, confirmed the effectiveness of these limits, indicating use by jets on the north end of Runway 4L/22R to be 0.0 percent. Regardless of these restrictions, however, the ability to separate smaller, slower turboprops from larger, faster jet aircraft on the parallel runways is an essential factor in allowing the airport to meet high demand levels when operating to the northeast or southwest.

Community Advisory Committee Anastasia S. Lyman

Code	Topic 1	Topic 2	Comment	Response
18.33	PRAS	Runway Use	Fig. 1.2-8 shows NW winds occurring 37% of the time. Operational history at Logan indicates that the tower has consistently used runway combinations based on capacity and convenience. If the runway combination 32/33/27 were available, the tower should be expected to use that combination over 1/3 of the time based on wind direction. (The current PRAS departure goals are 18% for RW27, 12% for RW 33.) That has not been incorporated into the noise exposure forecasts. The added impact in East Boston, Chelsea, Revere, and the "Runway 27 corridor" would be substantial.	According to FAA statistics for October through December 2000, the 33L/R&27 configuration was used 25 percent of the time, the 22L/R&27 configuration was used 23 percent of the time, and the 4L/R&9 configuration was used 20 percent of the time. It is important to recognize the distinction between the percentage of time a configuration is available, the percentage of time it is used, and the percentage of operations that use the runway. It should also be noted that if runway selection were based primarily on "capacity and convenience" that the highest-capacity 4L/R&9 configuration would be the most frequently used runway layout at Logan. An increase in northwest operations would certainly be expected with construction of Runway 14/32. This increase is consistent with the PRAS goals, for while the departure goals for Runways 27 and 33 are 18 percent and 12 percent respectively, the arrival goal for Runway 33 is 42 percent. The increased use of the northwest configurations with Runway 32 (due to their higher capacity, to the frequency of the wind direction, and to the PRAS goals) is reflected in all of the modeling and in the noise impact analysis. The argument that this modeling underestimates the use of the northwest configurations is contradicted completely by the CAC in other comments. On page 2 of the CAC Comment Highlights, it is stated that "the shifting of operations from the existing 3-runway combinations will be considerably less than projected" and that "shifting of operations to over Boston Harbor paths will be minimized". Furthermore, page 6 of the Chapter 6 comments states that "the proposed runway likely will not afford the projected degrees of opportunities to: (a) reduce delay ... and (b) permit the tower to shift traffic from the N-S runways to the 14/32-33L-27 combination." Given the conflicting comments regarding the shifting of flights due to use of Runway 14/32, the modeled use most likely represents a reasonable estimate.
18.34	Regional Jets	Operational Impacts	The discussion of jet vs. non-jet arrival streams should include discussion of impacts of developing regional jet aircraft operations, the requirements for separations between jets of various classes as well as between jets and non-jets should be presented, and the projected impacts on delay analyzed.	The possibility of an increased number of regional jet operations was analyzed in the Supplemental DEIS. Section 1.2.2.2 of The Supplemental DEIS/FEIR addresses the separation of aircraft of different weight classes (rather than jets vs. non-jets). FAA wake turbulence separation requirements are based on four categories (Small, Large, 757, and Heavy) which are determined by the maximum certificated takeoff weight. The class definitions and arrival separation standards were presented in Section 1.5.3.2 of the Draft EIS/EIR, and the current separation rules are incorporated into all of the delay analyses.
18.35	Alternatives	First Come/First Serve	The FAA should revise or rescind its policy of "first come/first served", so that during periods of congestion, controllers could sort departing and perhaps arriving aircraft into small groups by size class in order to reduce the impact of taxiway and trail separation requirements and differing speeds on delay.	The air traffic control system of the United States, which the FAA operates, is based on a first-come, first-serve policy. Any change in this policy is outside the scope of this project and would require a federal decision that would involve a major overhaul of the entire air traffic control system, including procedures, manuals, software, controller/pilot training, etc. The FAA is continually evaluating alternatives to increase efficiency of the national airspace system. However, future FAA initiatives will not eliminate the need for the proposed airside improvements at Logan Airport.
18.36	Fleet Mix/Forecast	Historic Trends	This section also discusses the trends in passengers and operations but does not substantiate how the projected growth in passengers can be accommodated with slower growth in operations.	The purpose of Supplemental DEIS/FEIR Section 1.3.1 - Current Activity and Historic Trends is to describe existing and historic conditions at Logan Airport, not future growth. Growth in passengers can be accommodated even with slower growth in operations through an increase in aircraft size and/or load factor.
18.37	Fleet Mix/Forecast	Historic Trends	The text infers that the observed slower growth in operations is due to a reduction in the regional carrier activity. If this is occurring as a result of consolidation of flights by use of large aircraft, then some of the projected benefits of Peak Period Pricing as proposed may not be realized.	The reduction in regional carrier activity was not due to a consolidation of flights into larger aircraft, but rather due to a decline in non-jet services that was only somewhat offset by increased regional jet activity. Non-jet activity declined by 67,830 annual operations from 1998 to 2000. Over the same period large jet operations increased by only 11,701 and regional jet activity grew by 24,032 operations. Non-jet markets such as Bangor, Presque Isle, Burlington, and Portland experienced a decline in frequency, while markets such as Buffalo, Hartford, Keene, and Lebanon lost scheduled non-jet

Code	Topic 1	Topic 2	Comment	Response
				services entirely. These declines were somewhat offset by increased regional jet services to non-stop medium-volume markets such as Richmond, Norfolk, Greensboro, and Nashville, as well as competitive entry markets such as Philadelphia and Washington National.
18.38	Fleet Mix/Forecast	Historic Trends	One way to look at "Logan's problem" is to note that over this period there appears to have been no improvement in the efficiency of moving people by air. A comparison of load factors between commuters and carriers should be presented.	It is incorrect to say that there has been no improvement in efficiency. Between 1994 and 1999, load factors at Logan Airport for North American jet flights increased from 57 percent to 61 percent, load factors at Logan for Regional non-jet flights increased from 46 percent to 47 percent, and international load factors increased from 74 percent to 77 percent. In addition to load factor, a second measure of efficiency is average aircraft size which increased from approximately 96 seats per operation in 1995 to 101 seats per operation in 2000. Load factor and aircraft size combine to determine the number of passengers per operation, or "the efficiency of moving people by air". Based on the most recent Massport data for CY2000, Logan passengers per operation increased from 52 to 56 between 1995 and 2000. While this has fluctuated with the percentage of activity performed by regional carriers, over the past 20 years, Logan passengers per operation increased by approximately 12 percent.
18.39	Fleet Mix/Forecast	Historic Trends	In equating passenger demand and aircraft operations in future scenarios, the Report suggests that significant growth in numbers of passengers per operation is expected. Table 1.3- 1 clearly shows the history at Logan of essentially no improvement over two decades in this statistic, with the number fluctuating almost randomly between 50 and 58, currently at 57. Thus the credibility of the forecast in Section 1.3.2 is questioned. The bases for assuming (a) that load factors don't materially improve in the near term, and (b) that they will in the long term, are not substantiated, nor do they appear reasonable. Without further support, the projections should be revised based on a more conservative and rational load factor of about 60 passengers per operation. If Massport maintains its projections, the mechanisms it anticipates implementing to attain the goal should be presented and supported.	The number of passengers per operation is determined by both aircraft size (number of seats per aircraft operation) and load factor (number of passengers per seat), the standard definition in the aviation industry. Logan Airport's load factors have been increasing over time and are expected to continue to do so consistent with FAA national forecasts. Despite the increasing load factors, Logan Airport's passengers per operation have fluctuated due to fluctuations in average aircraft size brought about by wide variations in the percentage of smaller regional non-jet aircraft. In 1980, non-jets made up approximately 20 percent of airport operations, but this number climbed to 40 percent by 1990. Between 1990 and 1998, this number fluctuated between 40 and 45 percent, but turned downwards in 1999 and 2000. The recent decline in non-jets has resulted in an increase in aircraft size from 96 seats per aircraft in 1995 to 101 seats per aircraft in 2000. The Logan Airport forecasts project modest increases in passengers per operation from 56 today to 64 in the 37.5M High RJ Fleet. These projections consider increases in both average aircraft size and load factors, and are consistent with FAA national projections (FAA Aerospace Forecasts FY2000-2011) that show U.S. regional/commuter passengers per operation increasing from 22 to 27, U.S. air carrier domestic passengers per operation increasing from 99 to 104, and U.S. air carrier international passengers per operations increasing from 173 to 186.
18.40	Fleet Mix/Forecast	Historic Trends	Fig. 1.3-2 presents a picture of a disturbing pattern. Over the 7-year period shown, nighttime operations have increased nearly as much as daytime operations have decreased. This is a trend that must be reversed, regardless of the elimination of Stage 2 aircraft and of any decision about the Airside Improvement Project.	This trend was discussed in Section 4.2.2.3 of the Supplemental DEIS/FEIR. Most of the reduction in daytime operations was a reduction in non-jet operations and the increase in nighttime operations has occurred overwater. To mitigate the impacts of nighttime flights, Massport has a nighttime overwater routing procedure for 33L arrivals and 15R departures. This head-to-head configuration concentrates the noise impacts over the harbor during the hours between 12AM and 6AM. In practice, FAA controllers switch to this configuration as soon after 11PM as demand permits. Looking forward, Table 6.2-17 of the Supplemental DEIS/FEIR shows nighttime jet operations are projected to increase. Many of these anticipated future night operations are the result of delays that will occur as demand at Logan Airport continues to increase. One of the direct benefits of the Preferred Alternative is that it will reduce the operations shifted into nighttime hours by 32 to 43 flights depending on the fleet forecast.

Code	Topic 1	Topic 2	Comment	Response
18.41	Capacity	Overscheduling	The statement that "over scheduling is not a problem at Logan today" represents a very narrow and inappropriate view of what constitutes over scheduling. Airport congestion has already and continues to cause delays categorized by Massport and the FAA as grossly excessive-that's over scheduling! Scheduling operations at or near the ideal maximum airfield capacity, knowing that most of the time those conditions will not prevail and that when they do, the PRAS goals cannot be approached much less attained-that's over scheduling!	For several years, Logan Airport has not had an overscheduling problem, but it has consistently had a reliability problem. When Logan Airport can operate on its three-runway configurations (4L/R&9 or 22L/R&27), typical demand levels can be accommodated with minimal delay. While the CAC has stated that "most of the time these conditions will not prevail", these three-runway configurations are available nearly 80 percent of the time. Based on the 1998 DELAYSIM analysis (No Action), when these three-runway configurations are in use, average runway-related delays are only 3.7 minutes per operation. In 2000 aircraft operation levels were below those of 1998. Today, delays accrue rapidly when wind or weather conditions force Logan Airport to operate on fewer than three runways, and Runway 14/32 is designed to address this problem. Overscheduling has occurred at Logan Airport in the past, most notably in the early 1990's when three major regional carrier systems were operating at Boston. At that time, peak hour activity levels exceeded 130 flights per hour during the peak summer season, and delays occurred even in favorable weather conditions. In its Section 61 Findings pursuant to the Massachusetts Environmental Policy Act, Massport committed to implementing an enforceable peak period pricing program, or an alternative demand management program with comparable effectiveness, for Logan Airport. The objective of this program will be to avoid or reduce delays associated with overscheduling of Logan Airport's available capacity in good weather conditions. The goal is to have a demand management program in place before overscheduling conditions occur at Logan Airport. The FAA acknowledges that Logan Airport is one of the nation's most delayed airports and that Massport has committed to and will propose to implement a demand management program to reduce overscheduling delays. The FAA acknowledges Massport's efforts and expects that any such program that is proposed for implementation will be consistent with applicable Federal law. The FAA is currently working with the U.S. DOT to establish national guidelines for demand management programs at U.S. airports. As part of this national effort, Logan has been selected as one of three airports to serve as a case study for U.S. airport demand management strategies.
18.42	Alternatives	PPP vs. 14/32	The selection of the preferred alternative does not make sense. The project was initiated in 1993 due to airline over scheduling. If airlines are not currently over scheduling now or in the future, the justification for the new runway is substantially reduced since wind conditions reducing Logan's operational throughput to less than 60 operations per hour occur only 10 days per year. The term "over scheduling" needs to be reshaped. The preferred alternative needs to include demand management techniques.	The Preferred Alternative was selected because it reduces delays at Logan Airport by increasing the efficiency of Logan Airport's runway and taxiway system and achieves certain environmental benefits. Construction of a unidirectional Runway 14/32 will increase the airport's operational reliability by preventing the decline in capacity that occurs during moderate to strong northwest winds. Northwest winds are the prevailing wind direction at Logan, occurring 37 percent of the time. Under moderate to strong northwest winds, the Airport is reduced to a two- or one-runway configuration. Since northwest winds usually coincide with clear, visual flight rules (VFR)conditions, operations could be accommodated with minimal delay if a three-runway configuration were available. By providing a third available runway during northwest winds and allowing the Airport to maintain its normal operating capacity, Runway 14/32 will significantly reduce northwest wind delays. Regardless of the number of days these conditions occur, the analysis shows that Runway 14/32 would reduce annual runway-related delays by 108,700 hours, or 29 percent under the 37.5M High RJ scenario. The various taxiway improvements will increase airfield efficiency and decrease taxiing delays by simplifying the existing taxiway system. The taxiway improvements would also enhance safety by reducing the potential for runway incursions. In its Section 61 Findings pursuant to the Massachusetts Environmental Policy Act, Massport committed to implementing an enforceable peak period pricing program, or an alternative demand management program with

Code	Topic 1	Topic 2	Comment	Response
				comparable effectiveness, for Logan Airport. The objective of this program will be to avoid or reduce delays associated with overscheduling of Logan Airport's available capacity in good weather conditions. The goal is to have a demand management program in place before overscheduling conditions occur at Logan Airport. The FAA acknowledges that Logan Airport is one of the nation's most delayed airports and that Massport has committed to and will propose to implement a demand management program to reduce overscheduling delays. The FAA expects that any such program that is proposed for implementation will be consistent with applicable Federal law. The FAA is currently working with the U.S. DOT to establish national guidelines for demand management programs at U.S. airports. As part of this national effort, Logan has been selected as one of three airports to serve as a case study for U.S. airport demand management strategies.
18.43	Delay	FAA Threshold	Indicating that the delay hours of 120,000 computed delay hours is six times the FAA's congestion threshold of 20,000 hours is not accurate since the metrics by which the delay hours are computed is different.. . . This is a misleading statement. The comparisons must be "apples to apples".	FAA statistics consistently rank Logan Airport as one of the nation's most delayed airports. While the computational methodologies are different, both the DELAYSIM modeling and FAA metrics indicate a severe delay problem at Logan Airport.
18.44	Delay	Statistics	Table 1.4-2 in Section 1.4.1 indicates that for almost all major airports, including Logan, the great majority of delay is of departures. Runway 14/32 has been urged as correcting a problem with arrival delays during NW winds (NW Wind Case Study). This should be reassessed.	OPSNET records the number of delays by 15 minutes or more, not the total duration of the delay incurred. OPSNET is useful as a comparative indicator, but does not provide a comprehensive measure of the actual delays experienced at an airport. Table 1.4-2 of the Supplemental DEIS does show that, in general, OPSNET records more departure delays than arrival delays, but the traffic management system (TMS) delays are even greater than the departure delays at airports like Logan Airport. The FAA's general policy is to give priority to aircraft in the air over aircraft on the ground. Also, if aircraft are held or slowed down enroute because of arrival delays at Logan Airport, these delays are recorded as Enroute or TMS delays. However, they are ignored unless they exceed 15 minutes in any sector. In general, the Preferred Alternative is designed to reduce delays, both for arriving and departing aircraft. Arrival and departure delays are closely related. Most of the delay reduction benefits of Runway 14/32 are associated with the use of Runway 32 for arrivals rather than the use of Runway 14 for departures; however, this does not mean that Runway 32 benefits only arrival delays. As an example, compare the Runway 33L/27 configuration with the Runway 33L/32/27 configuration. The availability of additional arrival capacity on Runway 32 reduces arrival delays by providing a second arrival stream. At the same time, by reducing the number of aircraft that are forced to arrive on Runway 33L, more gaps are created to allow full length and intersection departures on Runway 33L as well as departures on Runway 27. This reduces the delays experienced by departing aircraft when operating on this runway configuration. It should also be noted that the same aircraft that arrive at Logan Airport also depart after a limited turnaround and aircraft that arrive late usually depart late as well. Therefore, an increase in on-time arrivals results in a corresponding increase in on-time departures.

Code	Topic 1	Topic 2	Comment	Response
18.45	Regional	Regional Study	The Report cannot correctly be said to demonstrate: a. "the project is reasonably consistent with the existing plans of the public agencies for the development of the area". . . .. The FAA, the State of Massachusetts, nor the NE region has developed a system plan that can be implemented to address the aviation demand of Logan and the NE region. The FAA's current efforts to update the NE region system plan must address the capacity constraints at Logan.	Logan Airport is zoned by City of Boston as a transportation use and is consistent with local land use planning. The Airport is primarily located within the community of East Boston. The Proposed Action is consistent with the East Boston neighborhood District Zoning (Article 53), which includes the establishment of the Logan International Airport (LIA) Subdistrict. The airport is located within the LIA Subdistrict which has the stated purpose "to accommodate those uses necessary to the operation of an international airport while ensuring the land uses and development associated with operations of the airport are confined to the airport boundary and that such uses do not impose adverse impacts in other areas in the East Boston Neighborhood Plan, developed with participation of the East Boston Planning and Zoning Advisory Committee, civic associations, business groups, and residents." See Chapter 5, FAA Determinations and Approvals, in the Final EIS. Additionally, the FAA, Massport, the Massachusetts Aeronautics Commission, the other 5 New England states, the Manchester Regional Airport, and the Rhode Island Airport Corporation are conducting the New England Regional Aviation System Plan Update. The System Plan Update will forecast long-term passenger and cargo demand for the entire six-state region. The study will specifically address operational, capacity and environmental constraints at all study airports, including Logan Airport. A key component of the study will be to develop strategies to create a balanced and efficient regional airport network given existing constraints within the system.
18.46	Public Participation	Mitigation	..."fair consideration has been given to the interests of communities in or near the project location". . .The communities do not support the build alternatives and no specific mitigation (other than soundproofing and construction impact mitigation) has been proposed by the Proponents to mitigate the concerns of or the impacts on the communities.	There was an extensive public participation and review process during the preparation of the Draft EIS/EIR. Public comments were received on the ENF after it was filed during the summer of 1995. In the fall of 1995, several public scoping sessions were held to provide community input to the subsequent state and federal scopes for the project. To assure that the Airside analysis was conducted with awareness and input from all concerned parties, the Massport Board established the Airside Review Committee (ARC), which consists of the Community Advisory Committee (with representatives from 24 communities surrounding Logan Airport), and 11 businesses and industry organizations. Massport also funded independent consultants for the CAC to provide them with the capacity to professionally assess the analysis and conclusions of the Airside Study. About $350,000 of funding was provided to the CAC. Between 1995 and 1999, FAA and Massport held 16 meetings with the ARC, an additional 15 meetings with just the CAC, and several meetings with the CAC consultants. In addition, 29 presentations were made to elected officials, most of whom represent Logan Airport's neighboring communities, and 45 meetings were held with community and business leaders, reaching an audience of more than 3,000 people. During the public comment period on the Draft EIS/EIR, the FAA held two public hearings. In January 2000, in response to the FAA's review of the Draft EIS, the FAA called for preparation of a Supplemental DEIS to address specific issues identified by the FAA following input from a SDEIS Panel consisting of six persons. At the FAA's direction, three SDEIS Panel members were appointed by the Governor of the Commonwealth of Massachusetts and three were appointed by the Mayor of the City of Boston. Under the direction of the New England Region FAA, the SDEIS Panel convened in March of 2000 and then met at least monthly with a final meeting in December of 2000. A total of 12 meetings were held. To provide the appropriate background, the SDEIS Panel was presented with an Interim Supplemental DEIS, the Draft EIS/EIR, answers to significant letters written by members of the public, concerned agencies and public officials responding to the Draft EIS/EIR, and a series of 15 visual and written presentations from the Project's technical consulting team and other independent industry experts. Since the filing of the Supplemental DEIS/FEIR, a joint state and federal public hearing was held on April 25, 2001 at the Radisson Hotel in Boston with over 400 people attending and a

Community Advisory Committee Anastasia S. Lyman

Code	Topic 1	Topic 2	Comment	Response
				Spanish translator present as well. Massport and the FAA are undertaking several environmentally beneficial actions in addition to project-specific mitigation. These include commitments from Massport to (1) implement a PRAS Monitoring and Reporting System; (2) work with the communities to update the PRAS program; (3) implement an enforceable peak period pricing or alternative demand management program; (4) engage cooperative planning efforts to advance regionalization; (5) encourage airlines to reduce the number of hushkitted aircraft at Logan; (6) implement a program to maximize the use of single-engine taxi procedures by all airline tenants consistent with safety requirements, pilot judgment and applicable federal laws; and (7) take steps to mandate that all major employers participate in the Transportation Management Association (TMA). Together, the FAA and Massport commit to (8) conduct a noise study to assess potential new or enhanced noise abatement procedures or other noise relief measures and (9) conduct a New England Regional Airports System Plan Update. Massport committed to all of these mitigation measures in its Section 61 Findings set forth in Appendix A of the Final EIS. Refer also to Chapter 4 of this Final EIS for a complete discussion of these mitigation measures.
18.47	Cumulative	Land Use	Land use compatibility.. . . no proposals for zoning or land use changes in or around the airport are mentioned in this report, and there certainly widespread incompatibility at present.	The range of alternatives evaluated would be located on the existing airfield. Implementation of any of the proposed projects will not physically change the urban characteristics or the design of the built environment within adjacent communities when compared to the No Action Alternative. Increases in noise exposure do not warrant changes in zoning or land use changes. Additionally, neither the FAA nor Massport has zoning authority. Off-airport noise impacts from the Preferred Alternative are discussed in Section 6.2 of the Supplemental DEIS/FEIR and Section 2.2.1 of this Final EIS.
18.48	Cumulative	Airport vs. Project	..."appropriate air and water quality requirements will be satisfied". . . . No procedures are identified nor are commitments made to monitor air and/or water quality wherever elements of the Airside Improvement Project may have impacts. Air quality impact, like noise, is a condition attributable to the existence, operation and use of Logan Airport. The cumulative impacts of the airport and its neighbors in the regions of concern must be addressed. These are areas where considering only the limited scope and the impacts of the Airside Improvement Project alone are insufficient and inappropriate.	The Preferred Alternative will result in air quality benefits and no adverse effect on water quality. Consequently, there are no requirements to monitor airport water quality as a result of the Airside Improvements Planning Project. Nevertheless, Massport routinely monitors for air and water quality pollutants in accordance with its responsibilities under the Clean Air and Clean Water Acts.
18.49	Cultural Resources	Section 4(f)	The FAA's 4(f) assessment should consider whether any parkland lying within the 65DNL contour under 1998 conditions is included based on year 2000 operations and aircraft (particularly the elimination of Stage 2 AC), and if so, whether under the Airside Improvement Project it would be re-included.	Section 4(f) requires the identification of resources that would be used by any alternative under consideration. The proper comparison for a Section 4(f) assessment is a comparison of the Preferred Alternative to the No Action Alternative for each future scenario. There are no parklands, historic properties or sites, or other Section 4(f) resources on the airfield in the area of the proposed runway and taxiway improvements. The Airside analysis demonstrates that there are also no existing parklands in those areas where the 65 dB DNL contour for the Preferred Alternative extends beyond the 65 dB DNL contour for the No Action Alternative (Alternative 4). Furthermore, according to FAA Part 150 land use compatibility standards, parks are considered to be a compatible land use within the 65-70 dB DNL noise contour.

Community Advisory Committee Anastasia S. Lyman

Code	Topic 1	Topic 2	Comment	Response
18.50	Air Quality	Impacts	The Airport Layout Plan (ALP) approval should consider cumulative air emission impacts and the growth implications of the Airside Improvement Project as discussed above.	The air quality analysis conducted in support of the Supplemental DEIS/FEIR is based on the proposed ALP with the Airside Improvement Project(s) in place and operational. In this way, the emissions inventory and the dispersion modeling take into account the full range of both the existing and future conditions. In the case of dispersion modeling, off-site emission sources are also accounted for by using background levels.
18.51	Regional	Demand	It is asserted by Massport that a combination of factors, including congestion and delay at Logan, difficult ground access to Logan, promotion of the regional airports, and introduction of frequent low-fare service to a number of markets from those airports, have combined to result in a significant shift of passenger growth to the regional airports (principally Manchester, NH and T. F. Green in Warwick, RI) . The data presented in the Supplemental DEIS/FEIR supports a quite different conclusion. Overall growth in passenger demand at Logan over the past decade has been about 2.7% per year. Massport projects a growth in passenger demand at Logan of about 2.6% per year from 2000 to about 2015, a continuation of the trend of the past decade with no appreciable impact of "regionalization". Passenger demand growth at Logan was at a slightly higher average rate, 3% per year, during the first part of the decade, from 1990-1996, prior to the onset of enhancement of service at Manchester and Green. (Included in that average is the effect of a slight drop in total passengers during 1995.) Had the trend of the first half of the decade continued from 1995 through 2000 Logan passenger demand would have been about 28 million last year, instead of the actual 27.4 million. The growth in passenger demand continues unabated at Logan despite the existence and promotion of the regional airports.	The data presented in Table 1.3-1 of the Supplemental DEIS/FEIR demonstrates that passenger growth at Logan Airport has slowed over time. Furthermore, projections of future Logan Airport passenger demand as described in Section 4.2 of the Supplemental DEIS/FEIR assume that this trend of slower passenger growth at Logan continues into the future as regional airports and other travel alternatives absorb more of the region's demand. The assertion that forecast growth is the same as historic growth is false and is based on incorrect growth rate calculations. All the growth rates cited in the comment are incorrect. For example, Logan Airport's passenger demand increased at an average annual compound rate of 1.6 percent from 1990 to 1996, and not 3 percent as cited in the comment. [Note that the correct calculation for compound growth using this example is: (25,134,000/22,878,000)^(1/(1996-1990))=1.6 percent.] Logan Airport air passengers are forecast to increase by 2.1 percent per year from 27.4 million in 2000 to 37.5 million in 2015. While this is higher than the 1.5 percent growth achieved from 1990 to 1996, it would be incorrect to compare a forecast long-term growth rate to a short-term growth rate. The 1990-1996 period was characterized by several shocks that depressed traffic over the short-term. A national economic recession, a surge in worldwide terrorism, rising fuel prices, and the Gulf War all combined during this period to temporarily depress worldwide air passenger demand. It is more appropriate to compare long-term forecast growth projections to Logan Airport's long-term historic growth. From 1980 to 2000, Logan air passengers grew at an average annual rate of 3.1 percent per year. The forecast growth rate of 2.1 percent (27.4 million in 2000 to 37.5 million in 2015) is significantly lower than Logan Airport's historic long-term growth, reflecting the influence of a stronger regional airport network and rail alternatives. The impact of regionalization on Logan Airport's passenger growth is further validated by the 1999 Logan Air Passenger Survey which found that Logan Airport attracted fewer passengers from the region outside of I-495 than it did in 1996. Based on the survey findings it is estimated that Logan Airport attracted 3.3 million passengers from outside I-495 in 1999, compared to 4.8 million in 1996. Over the same period, total Logan Airport passengers increased from 25.1 million to 27.1 million. If the Logan Airport demand that originated from outside I-495 in 1996 grew at the same rate as demand from inside I-495, Logan would have accommodated an additional 2.4 million passengers, or 29.5 million passengers in 1999. Instead, Logan Airport handled 27.1 million passengers in 1999. In 1995, the FAA, the Massachusetts Aeronautics Commission (MAC) and Massport sponsored the New England Regional Airports Air Passenger Service Study. This study, which involved participants from all the New England states, was the first of its kind to examine air service feasibility from a regional perspective without regard to state borders or authority responsibility. The 1995 study was instrumental in guiding regional transportation decisions, with many of its recommendations having been successfully implemented. These efforts will continue with the New England Regional Aviation System Plan Update, an update of the 1995 study. The System Plan Update will forecast long-term passenger and cargo demand for the entire region, identify operational capacity and environmental constraints to growth, and formulate strategies for maximizing regional airport use and creating a balanced and efficient regional airport network.

Code	Topic 1	Topic 2	Comment	Response
				Furthermore, this comment which states "The growth in passenger demand continues unabated at Logan..." contradicts an earlier comment which states that passenger growth at Logan "...appears to be leveling off" (see comment 18.7).
18.52	Regional	Demand	The observed decline in Logan's share of regional passenger volume is more likely attributable to stimulation of overall demand by the introduction of frequent, low-fare service at Green and Manchester Airports especially. Our hypothesis is that air passenger volume on a regional basis has grown faster than otherwise it would have due to creation of an attractive service. Passengers have shifted from automobile travel and have undertaken discretionary travel, travel that would not otherwise have occurred. Logan has generally retained its "market".	The entry of Southwest Airlines and other low-fare carriers, such as DeltaExpress and MetroJet, into the regional airports resulted in significant traffic growth at the T.F. Green/Providence, Manchester and Hartford/Bradley airports. The traffic stimulation experienced by these airports as a result of new services and low fares includes not only new passenger trips and diversion from alternative modes (i.e., autos, bus and rail) but also includes diversion from other airports, mainly Logan. The nonstop jet services and lower air fares introduced by these carriers increases the attractiveness of the regional airports to the traveling public. As a result, the regional airports recapture air passengers that originate within their primary markets areas but formerly used Logan Airport to meet their air travel needs. The slowing of Logan Airport's growth rate at a time when the national and regional economies were expanding is a clear indication that the low-fare service expansion at the regional airports diverted traffic from Logan Airport in addition to inducing demand. This is further validated by a comparison of Massport's 1996 and 1999 Logan Air Passenger Surveys. See also response to Comment 18.51.
18.53	Regional	Regional Study	Efforts to shift demand away from Logan to regional airports are less effective than postulated by Massport...need to better and more fully understand the dynamics of the situation...effective demand management techniques must be devised and implemented in order to preclude over-saturation of Logan. Only with a comprehensive and correct grasp of the situation dynamics can such a system be devised and tested.	Efforts to develop and promote the regional airports have been highly successful. Since 1996, 8 out 10 net new air passengers in New England have used a regional airport rather than Logan. Prior to 1996, the reverse was true with 8 out 10 new air passengers using Logan Airport. To ensure that the region continues to benefit from a strong regional airport system, the FAA, Massport, the Massachusetts Aeronautics Commission, the other five states, the Manchester Regional Airport, and the Rhode Island Airport Corporation are conducting a New England Regional Aviation System Plan Update, an update of the 1995 New England Regional Airports Air Service Study. The System Plan Update will provide the analytical context for understanding the dynamics of the New England regional airport system and the changes it has undergone since the 1995 study. Specifically, the study will forecast long-term passenger and cargo demand for the entire region, identify operational capacity and environmental constraints to growth, and formulate strategies for maximizing regional airport use and creating a balanced and efficient regional airport network. The System Plan Update will also analyze the service developments that have occurred at the regional airports since the mid 1990s and will identify the types of service development that will be needed to accommodate future demand. Regional airport, aviation and transportation planning officials from each of the six New England states will participate in the study. In its Section 61 Findings pursuant to the Massachusetts Environmental Policy Act, Massport committed to implementing an enforceable peak period pricing program, or an alternative demand management program with comparable effectiveness, for Logan Airport. The objective of this program will be to avoid or reduce delays associated with overscheduling of Logan Airport's available capacity in good weather conditions. The goal is to have a demand management program in place before overscheduling conditions occur at Logan Airport. The FAA acknowledges that Logan Airport is one of the nation's most delayed airports and that Massport has committed to and will propose to implement a demand management program to reduce overscheduling delays. The FAA expects that any such program that is proposed for implementation will be consistent with applicable Federal law. The FAA is currently working with the U.S. DOT to establish national guidelines for

Code	Topic 1	Topic 2	Comment	Response
				demand management programs at U.S. airports. As part of this national effort, Logan has been selected as one of three airports to serve as a case study for U.S. airport demand management strategies.
18.54	Regional	Rail	Since the newly established high speed Boston-New York rail system has considerable unused capacity, substantial and sustained efforts to ensure its selection over air travel is justified to reduce congestion at Logan attributable to short-haul movements. In statements made at the public hearing for the Supplemental DEIS/FEIR, the Head of the Amtrak Board, former Governor Dukakis, testified that Massport has underestimated the number of Logan passengers who will opt for the ACELA.	This Final EIS relies on the official high-speed rail ridership and diversion estimates published in the Final Environmental Impact Statement/Report and Section4(f) Statement, Northeast Corridor Improvement Project, prepared by the Federal Rail Administration in October 1994. Amtrak has not publicly disclosed any updated projections of overall Acela Express ridership or the amount of traffic it is expected to divert from the Boston-New York air shuttle services. Refer to Volume III, Appendix B of the Supplemental DEIS/FEIR for Amtrak's written response to FAA's request for updated ridership numbers. The New England Regional Aviation System Plan Update, which is being conducted by the FAA, Massport, the Massachusetts Aeronautics Commission, the other 5 New England states, the Manchester Regional Airport, and the Rhode Island Airport Corporation, will assess the potential for Acela and other high-speed rail corridors in New England to accommodate a portion of the region's long-term air travel demand. The Volpe National Transportation Systems Center has been added to the Project Team to provide analysis of rail options. In addition, representatives from the U.S. DOT's Inter-Modal Working Group, which includes experts from the Federal Rail Administration, will provide peer review.
18.55	Regional	Regional Airports	Massport states its intention is to shift Logan activities "to the long-haul and international market" (Juves, 4/7/01). In 1999 (1999 ESPR) about 10% of all departures from Logan by scheduled carrier services were for non-stop flights in excess of 1500 miles. "Regional Jet" aircraft operation, serving markets within 1000 miles or less of Logan, is the fastest-growing activity segment at Logan. While Logan will remain the dominant long-haul airport in the region, the heavy preponderance of its passengers will be in the short- to medium-haul markets.	While the majority of Logan Airport flights are to short-haul and medium-haul markets, this is largely a function of how the airline industry operates. Because the airlines operate connecting hubs, many of Logan Airport's long-haul true origin-destination (O&D) passengers utilize short and medium-haul flights to airline connecting hubs and then transfer to other flights at the hub to reach their final destination. Examples of short-haul markets from Logan Airport that function as airline connecting hubs are Newark (a Continental hub), Pittsburgh (a USAirways hub), Chicago (a hub for both American and United), and Atlanta (a Delta connecting hub). Many passengers on these flights are in fact traveling to long-haul markets via a connecting flight at the hub. In addition, Logan Airport's core market area, the City of Boston and surrounding suburbs, represents the largest concentration of population in the New England region. This market area generates substantial outbound and inbound O&D passengers to short-haul markets such as New York, Philadelphia, Washington, Chicago, and Atlanta. The substantial volume of air passengers traveling to/from these short and medium haul markets is best accommodated by direct, nonstop services. In summary, the short- and medium-haul flights at Logan Airport carry passengers traveling to many destinations, including long-haul destinations, and will likely represent the majority of Logan Airport's nonstop flights in the future. However, Logan Airport is and will remain the dominant airport for long-haul origin-destination (O&D) passengers. For the 12 months ended September 30, 2000, 41 percent of Logan Airport's true O&D passengers were in markets of 1500 miles or more. By comparison, the short-haul markets accounted for 31 percent of Logan Airport's true O&D passengers. The long-haul sector is not only the largest segment of Logan Airport O&D passengers it is also the fastest growing. From 1996 to FY 2000, Logan Airport's long-haul O&D passengers increased at an average annual rate of 4.1 percent. Medium haul (750-1500 miles) O&D passengers grew at 2.4 percent per year over the same period. Short haul (under 750 miles) O&D passengers increased by just 0.1 percent per year. As regional airports gain more services to short and medium haul markets, passengers originating outside of I-495 will be less reliant on Logan Airport for services to these markets and the long-haul segment will be the largest segment Logan

Code	Topic 1	Topic 2	Comment	Response
				Airport's O&D passengers.
18.56	Regional	Demand	A corollary is that not enough long haul/international traffic exists to alone support a new major airport, were there a plan to establish one. But if the emerging class of New Large Aircraft dominates that market segment, Logan will be hard-pressed to make the necessary physical changes to serve those aircraft. It has proven useless to argue in this forum for the need to reconsider the decision to not undertake development of a "second major airport" in eastern Massachusetts. The New England Airports System Study will, it is hoped, revisit that question as well as the potential role of Pease in the long-haul/international market.	Very Large Aircraft are not forecast to be in use at Logan Airport, nor are they forecast to be a significant part of the future airline industry fleet. The Airbus A-380 with a capacity of 555 seats is the only all-new Very Large Aircraft available today. Singapore Airlines will be the first operator of the A-380 taking delivery of its first aircraft in 2006. According to the Airbus Global Market Forecast, Very Large Aircraft are primarily targeted to serve the high-density Asian-Pacific market. In 2019, Airbus projects that there will be 1,235 Very Large Aircraft, representing just 6 percent of the worldwide fleet. The Airbus forecast shows that narrowbodies, which seat 100 to 175 passengers and are the dominant large jet in operation at Logan, will account for 55 percent of the worldwide fleet in 2019. Airbus projects that the Very Large Aircraft fleet will be highly concentrated with 57 percent deployed in Asia. Only 17 percent are projected to be operated in North America. Logan Airport is not among the top ten airports forecast to accommodate Very Large Aircraft. In North America, Airbus projects that Very Large Aircraft will be deployed at New York Kennedy and Los Angeles to serve London Heathrow, Tokyo and other Asian markets. The New England Regional Airport System Plan Update will forecast long-term passenger and cargo demand for the entire region, identify operational capacity and environmental constraints to growth, and formulate strategies for maximizing regional airport use and creating a balanced and efficient regional airport network. The Scope of Work for the System Plan Update can be found in Appendix C of the Final EIS.
18.57	Regional	General Aviation	"General aviation" operations...are increasing and there has been no serious analysis of: (a) the impact of G/A operations on delays during congested periods or (b) the possibilities of redirecting that traffic. It would seem in the absence of contradictory information that per operation the impact of a G/A aircraft on airfield operations would be comparable to that of non-jet passenger aircraft (e.g., "commuter airlines"). On a "per passenger" basis the impact on delay of G/A aircraft might be greater than of any other category of aircraft! At least one other airport has in effect banned G/A operations by establishing a minimum seat capacity for access to the airfield.	Since 2000, general aviation (GA)activity at Logan Airport has been declining. General aviation is highly correlated to changes in business and economic conditions increasing during an economic expansion and declining in response to an economic slowdown. GA activity at Logan Airport has certainly followed these trends. Logan's GA operations grew by 12.2 percent a year from 1995 to 1999 as the local and national economy surged. In 2000, as the economy slowed, general aviation operations declined by 7.1 percent over the previous year. The decline in GA activity has accelerated in 2001. As of May 2001, Logan Airport's year-to-date GA operations are down by 20.4 percent over the prior year. In addition to changes in economic growth, some of the growth seen in 1999, and the subsequent decline in 2000, was due to one-time special events in the Boston area, i.e., the 1999 Ryder Cup golf tournament in September and the 1999 Baseball All-Star Game in July. The delay modeling and the future fleets analyzed in this Airside Final EIS reasonably assumed that Logan Airport would continue to accommodate a small amount of GA activity. Logan Airport accommodates only a small portion of the region's GA activity. According to the FAA's Terminal Area Forecast, actual data for 1999 show that only 5 percent of the general aviation activity that occurred at airports within I-495 was handled by Logan Airport. Hanscom Field, which serves as the region's largest GA reliever airport, accommodated 212,000 GA operations, more than 6 times the 35,000 GA operations that occurred at Logan Airport. Even capacity-constrained airports, such as New York LaGuardia, accommodate some GA activity. The FAA has allocated six out of approximately 80 hourly slots at LaGuardia to GA users. No airport proprietor is permitted to implement an access restriction such as a GA ban without following the procedures of FAR Part 161. Only measures of a totally voluntary nature that have no penalty associated with them are excluded from Part 161 requirements. The FAA's Part 161 process is a difficult process for airports to undertake because of the demanding legal requirements that must be satisfied to obtain approval for access restrictions. To date, no large air carrier airport has been able to obtain an approval for a

Code	Topic 1	Topic 2	Comment	Response
				Part 161 mandatory access restriction. Naples, a general aviation airport in Florida, submitted a Part 161 application, proposing a 24-hour ban on Stage 2 aircraft under 75,000 pounds, to the FAA in June 2000. The FAA ruled that the submission was incomplete. Naples is in the process of performing supplemental analysis requested by the FAA.
18.58	Regional	Demand	We believe the data presented on the growth of passenger volume at the principal regional airports, T.F. Green (Providence) and Manchester, NH, suggests that a significant portion of that growth may be stimulated by low fares and service, rather than diverted from Logan. The absence of connecting flights, and limited range of and markets served by direct flights, will mitigate against the success of both the regional airports and Massport's objectives. We think this topic deserves very serious consideration in the New England Airports System Study.	See response to Comments 18.52 and 18.53.
18.59	Regional	Regional Study	Regional transportation/communication planning should be of the highest priority. It should be undertaken and overseen by a truly regional entity not biased toward or by proponents of any one element of the system. The resources of the leading universities of the region should be tapped to ensure a broad, forward-thinking approach to the problem. As Prof. Odoni pointed out and as we have consistently argued, the Airside Improvements Project is a band-aid approach without perceivable long-term impacts on a major problem that cannot be ignored.	There is no single solution that will eliminate all sources of airside delays at Logan Airport. The Preferred Alternative, specifically Runway 14/32, addresses delays that occur during northwest winds and provides delay reduction benefits. If no actions are taken, runway-related delays could increase from 120,000 annual hours in 1998 to as high as 333,000 under a 37.5M High Fleet scenario. The Preferred Alternative produces immediate and long-term benefits by lowering runway delays by 38,000 hours under 1998 conditions, and by as much as 94,000 hours in the future 37.5M High Fleet scenario. The sooner airside efficiencies are implemented, the more benefits will accrue over time. Regional transportation planning is also needed to lessen the region's reliance on Logan Airport by developing and promoting an effective system of regional airports and high-speed rail services. To further the role of regional airports, the FAA, Massport, the Massachusetts Aeronautics Commission, the other 5 New England states, the Manchester Regional Airport, and the Rhode Island Airport Corporation are conducting the New England Regional Aviation System Plan Update, an update of the 1995 New England Regional Airports Air Service Study. The System Plan Update will forecast long-term passenger and cargo demand for the entire region, identify operational capacity and environmental constraints to growth, and formulate strategies for maximizing regional airport use and creating a balanced and efficient regional airport network. Regional airport, aviation and transportation planning officials from each of the six New England states, in addition to the FAA, and Massport, will participate in the study. The study will include a forum for peer review and the sharing of information with experts in other transportation disciplines. Peer review will be provided by a panel of independent experts from area colleges and universities as well as representatives from the U.S. DOT's Inter-Modal Working Group, which consists of experts from the Federal Highway Administration, the Federal Transit Authority, and the Federal Rail Administration, in addition to the FAA. Also, the Volpe National Transportation Systems Center has been added to the Project Team to provide analysis of rail options. Peak period pricing or other demand management techniques can also play a role by reducing delays that occur when Logan Airport is overscheduled and by acting as a deterrent to overscheduling. In its Section 61 Findings pursuant to the Massachusetts Environmental Policy Act, Massport committed to implementing an enforceable peak period pricing program, or

Code	Topic 1	Topic 2	Comment	Response
				an alternative demand management program with comparable effectiveness, for Logan Airport. The objective of this program will be to avoid or reduce delays associated with overscheduling of Logan Airport's available capacity in good weather conditions. The goal is to have a demand management program in place before overscheduling conditions occur at Logan Airport. The FAA acknowledges that Logan Airport is one of the nation's most delayed airports and that Massport has committed to and will propose to implement a demand management program to reduce overscheduling delays. The FAA expects that any such program that is proposed for implementation will be consistent with applicable Federal law. The FAA is currently working with the U.S. DOT to establish national guidelines for demand management programs at U.S. airports. As part of this national effort, Logan has been selected as one of three airports to serve as a case study for U.S. airport demand management strategies.
18.60	Regional	Regional Airports	With some brief comments regarding Pease International Tradeport, Massport does not identify airports, such as New Bedford, that could develop cargo operations to shift this activity away from Logan.	There is an ongoing EIS to study the potential for air cargo operations at New Bedford. This study has not yet selected a Preferred Alternative that involves cargo capability, so it is not yet reasonably foreseeable that all-cargo operations could shift from Logan to New Bedford. In 2000, all-cargo operations accounted for less than 3 percent (12,282 operations) of total aircraft operations at Logan Airport. The majority of all-cargo operations occur during off-peak hours, periods of low-demand, and do not contribute to delays at Logan Airport. While the potential for all-cargo operations at airports like New Bedford and Pease may lessen the demand for all-cargo operations at Logan Airport, it would not reduce airside delays at Logan Airport. Currently on-airport space at Logan Airport for all-cargo support services, such as warehousing, is limited and will be further reduced in the future. Carriers have responded to these influences by shifting some all-cargo activity, or growth, to regional airports. The New England Regional Aviation System Plan Update will forecast long-term cargo demand for the entire region, identify operational capacity and environmental constraints to growth, and formulate strategies for maximizing the use of regional airports for all-cargo services.
18.61	Regional	Regional Airports	It does not appear from the text that Massport has adequately and properly addressed the requirement of the Certificate of the Secretary on the DEIR to ". . quantify the effects of these measures. . . " (ground access improvements to all four airports .. .). To be useful in assessing any enhancement of the regional airports as alternatives to Logan, this quantification must show in what ways, and to what extent, the contemplated improvements will overcome existing and potential future constraints on access to these airports.	The June 15, 2001 EOEA Certificate on the FEIR states, "The FEIR reports on the current status of ground access improvements to all four airports, as proposed by state transportation agencies in Massachusetts, New Hampshire, and Rhode Island. … As required in the DEIR certificate, the document quantifies the effects of these measures upon projected passenger levels at each of the airports…" See Chapter 2, Section 2.8 of the Supplemental DEIS/FEIR. An important part of the New England Regional Aviation System Plan Update is to assess the current ground access network and any planned improvements and to formulate creative ground access strategies for enhancing the attractiveness and the use of regional airports in New England.
18.62	Regional	Regional Airports	Table 2.9-1 "Investments in the Region's Airports" is incomplete by virtue of failure to include investments made at or associated with Logan, for comparison.	Comment noted. The FAA has invested approximately $70 million in Logan Airport infrastructure improvements over the last decade (FY91 to FY01), about one-third of the $215 million invested in regional airports, as shown in Table 2.9-1 of the Supplemental DEIS/FEIR.

Community Advisory Committee Anastasia S. Lyman

Code	Topic 1	Topic 2	Comment	Response
18.63	Regional	Regional Study	The New England Airports System Study as scoped does not appear broad enough to address the inadequacies and problems of the New England transportation system. The proposed study is primarily focused on expanding air travel capacity, and the management system for the study is inherently biased in that direction. Therefore the study is unlikely to produce useful or acceptable recommendations.	While the New England Regional Aviation System Plan Update is not a part of the Airside Project, the final scope for the study is contained in Appendix C of this Final EIS. The study will include a forum for peer review and the sharing of information with experts in other transportation disciplines. Peer review will be provided by a panel of independent experts from area colleges and universities as well as representatives from the U.S. DOT's Inter-Modal Working Group, which consists of experts from the Federal Highway Administration, the Federal Transit Authority, and the Federal Rail Administration, in addition to the FAA. Also, the Volpe National Transportation Systems Center has been added to the Project Team to provide analysis of rail options. The Study will also include a process for providing information on the study to interested parties and publicly presenting the findings through the internet and other appropriate media. While the focus of the Study is on the regional air transportation system, it will be evaluated in the context of the entire intermodal transportation system that serves the region.
18.64	Regional	Alternatives	We take strong exception to the concluding paragraph of this section. Regionalization and RW 14/32 are not the only answers to NW wind delays. Demand management techniques and substantial reduction of small plane traffic at Logan could materially ease delay during such periods, which are quite limited in any event.	Northwest winds are the prevailing winds at Logan Airport, occurring approximately 37 percent of the time. During moderate northwest winds when the airport moves to the Runway 27/33 configuration, the airport's capacity falls from its normal operating capacity of 120 hourly operations to approximately 80 operations per hour. No realistic demand management program would reduce Logan Airport's hourly flight activity to a level that could be accommodated without delay during these conditions. Demand management techniques, such as peak period pricing, are most effective at reducing the hourly demand that exceeds normal operating capacity. The FAA's goal is to satisfy the demand for air transportation at Logan as safely and efficiently as possible without artificially constraining demand.
18.65	Runway 14/32	Unidirectional Commitment	Additional detail should be provided documenting how the proposed uni-directional runway would be required to remain as such. (Cite examples from other airports, indicate legal requirements, etc.)	The Runway 14/32 concept under review allows unidirectional operations only (i.e., all aircraft arrivals would occur over Boston Harbor to the Runway 32 approach and all departures would initiate from the Runway 14 heading out over Boston Harbor). Massport will light and stripe Runway 14/32 to accommodate unidirectional operations only. The unidirectional limitations of Runway 14/32 allow maximum use of over-water operations and thereby preclude operational impacts over residential areas. FAA approval under NEPA will allow Runway 14/32 to proceed only on a basis consistent with the stated unidirectional limitations. The location of proposed Runway 14/32 involves physical limitations that reinforce the unidirectional requirements of that improvement concept. The Hyatt Hotel and Conference Center, which is 174 feet high, is within 1,300 feet of the Runway 14. The location of the Hyatt Hotel and Conference Center obstructs applicable FAA approach surface requirements, thereby precluding arrivals from the west to Runway 14. Another factor limiting westerly operations on Runway 14/32 is the lack of available facilities to allow aircraft to taxi to the Runway 32 end for departure. Refer to Section 8.5 of the Supplemental DEIS/FEIR and to Section 4.1 of this Final EIS for a discussion of enforcement of the unidirectional limitation.
18.66	Centerfield Taxiway	Taxiway Delays	Provide a comparison analysis of delay reduction if only the south half of the centerfield taxiways was developed.	Omitting the northern section of the Centerfield Taxiway would eliminate many of the delay and environmental benefits provided by the taxiway and consequently is not an appropriate alternative. Arrivals on Runway 4R would have to queue up to cross Runway 4L for Taxiway November, and heavy departures on Runway 22L would have to wait in the November Taxiway queue along with the Runway 22R departures. Therefore, constructing the south half of the Centerfield Taxiway was not carried forward for detailed analysis.

Community Advisory Committee Anastasia S. Lyman

Code	Topic 1	Topic 2	Comment	Response
18.67	RJs	Runway Use	Massport states "based on discussions with airlines and airports and the FAA consultant's analysis included in Appendix C, most of the regional jet types forecast to use Logan in the future are capable of landing on a 5,000 ft runway." This statement is untrue. Appendix C indicates that CRJs and ERJ in wet conditions will not use the runway. Massport also provides a sensitivity analyses that specifically identifies which RJs will and will not use the runway. CRJs make up a substantial amount of existing and future RJ fleets. FAA's consultant states the analysis should not assume that CRJs would use a 5,000-foot runway for landing. Massport needs to reevaluate the Runway Length Screening section to reflect the information provide in Appendix C and in Chapter 4 in the RJ Sensitivity Analysis.	Using the assumptions provided by the FAA's consultant and described in Appendix C of the Supplemental DEIS/FEIR, most of the regional jets forecast to use Logan Airport in the future are capable of landing on a 5,000 foot runway. Of the 184,000 regional jets in the 37.5M High RJ fleet, 43,000 are Dornier 328Jets, 36,000 are CRJs, and 100,000 are Embraer 135/145s. The remaining regional jets are larger 70-seat models that were assumed to be incapable of landing on Runway 32. Assuming that the 328 Jets could land under any conditions and that the Embraers could land under dry conditions (which occur 88 percent of the time), approximately 131,000 regional jets, or 71 percent of the future regional jet fleet, are able to land on Runway 32. This constitutes most of the regional jets forecasts to use Logan Airport in the future. Using those same assumptions, approximately 79 percent of Logan Airport's recent regional jet operations (June 2001) could land on Runway 32. Nothing in this analysis affects the selection made as a result of the runway length screening analysis. Chapter 2, Project Issues, of this Final EIS discusses the analysis.
18.68	RJs	Runway Use	Provide letters from a majority of the airlines operating at Logan indicating they intend to use a 5,000-foot runway at Logan for their regional jet fleets. This comment recognizes that while the FAA may authorize, and manufacturers may state, the airlines and their pilots make the final decisions in operating the aircraft.	This Final EIS includes letters from American Eagle and ACJet Airlines, as well as Air Transport Association indicating their intention to use the 5,000 foot runway. In addition, American Airlines and United also indicated their support of the runway. Refer to Appendix F of this Final EIS.
18.69	Runway 14/32	Runway Use	Provide an indication of the types of aircraft that are represented by ARC C-III.	Airport Reference Code (ARC) C-III indicates the highest approach speed and widest wingspan of the aircraft intended to use the runway. Approach Category C includes those with speeds from 121 to 140 knots, and Design Group III designates wingspans from 79 to 117 feet. ARC C-III (and lower design categories such as A-I, A-II, A-III, B-I, B-II, B-III, C-I, and C-II) include a number of business jets such as the Dassault Falcon, the Canadair Challenger, and the Cessna Citation; commuter non-jets such as the Beech 1900, the BAe Jetstream 31, and the DeHavilland Dash-8; regional jets such as the Canadair Regional Jet, and even larger jets such as the Boeing 737 and the Airbus A320. The complete list of aircraft types by Airport Reference Code can be found in FAA Advisory Circular 150/5300-13 Airport Design. Although larger jets fall into ARC C-III, their required runway takeoff and landing distances would prevent many of these aircraft from using Runway 14/32. For operating efficiency, FAA controllers would keep the larger jets on Runway 33L and the smaller aircraft on Runway 32.
18.70	Runway 14/32	Instrumentation	What are the proposed (initial and future) approach visibilities for the proposed Runway?	Runway 14/32 is intended to be used primarily in good weather to provide another high-capacity 3-runway configuration for northwest operations. Runway 32 will also be capable of simultaneous but dependent arrivals with Runway 33L during instrument conditions. Runway 14/32 is designed for non-precision approaches. The approach minimums for Runway 32 will be relatively high: a minimum ceiling of approximately 400 feet and a minimum visibility of 3/4 mile.
18.71	Runway 14/32	Instrumentation	Explain if there are any requirements for approach landing systems, either initially or projected in the future. If so, what type(s), where located, and how installed? These facilities should be included in the SDEISFEIR.	See response to prior comment 18.70. During the transition to wide-spread GPS approaches, an instrument landing system (ILS) localizer and glideslope were planned for Runway 32 to allow stabilized approaches to a minimum ceiling of 400 feet and a minimum visibility of 3/4 mile. While a practical near-term location for the localizer has not yet been determined, FAA has accelerated the development of GPS approach procedures for Runway 32. The FAA believes that approach minimums to 400 foot ceilings with 3/4 mile visibility are reasonably foreseeable with GPS approaches in the longer-term. See Appendix G of this Final EIS for more information.

Community Advisory Committee Anastasia S. Lyman

Code	Topic 1	Topic 2	Comment	Response
18.72	Runway 14/32	Safety	Layout Option C is recommended for the runway alignment; however, it does not meet FAA criteria for Runway Safety Areas. FAA is currently emphasizing protection of safety areas and object free areas. Does FAA intend to give a deviation to standard (If the SDEIS is FAA's document - shouldn't they rule on this now?)?	A Runway Safety Area (RSA) is designed to provide a buffer when an aircraft passes beyond the end of a runway during an aborted takeoff or while landing. The Runway Safety Area for Runway 14/32 is planned to extend 1000 feet beyond the runway thresholds on either end and to be 500 feet wide, based on the aircraft normally expected to use the runway (Airport Reference Code C-III). However, it is anticipated that many of the aircraft using the runway will be smaller and actually require a RSA only 600 by 300 feet. The standard 1000 by 500 foot RSA for Runway 14/32 will be fully accommodated except for each far corner at the Runway 32 arrival end. FAA anticipates approving this insignificant modification to standards.
18.73	Runway 14/32	Safety	If the FAA does not provide a modification, discuss the effects to usage of the runway, if a deviation is not permitted. Additionally, would the FAA give deviations to FAR Part 77 and taxiway object free area penetrations standards for Runway 14?	FAA anticipates approving this insignificant modification to standard. The level of design for Runway 14/32 to date, does not identify any issues with respect to the taxiway object free area or the FAR Part 77 surfaces.
18.74	Runway 14/32	Construction Costs	Provide development cost estimates for Options A, B, and C including costs of replacing aircraft parking locations, and for removing the Hyatt hotel parking (option A).	Cost estimates are not required or practical as part of a Final EIS, and are not a determinant in selection of the Preferred Alternative.
18.75	Runway 14/32	Design	Identify the location of the water on the figures illustrating Options A, B, and C.	Comment noted. Refer to Figure 3.2-3 of the Supplemental DEIS/FEIR showing deck or fill area, indicating there is water beneath.
18.76	Runway 14/32	Design	Discuss where the eliminated parking positions shown in Figures 3.2-2, 3.2-3, and 3.2-4 are to be replaced.	No final location has been determined as yet.
18.77	Runway 14/32	Design	For Option C, identify if the Hyatt Hotel penetrates the FAR Part 77 surfaces for missed approaches. Is there the required FAR Part 77 clearance over a public road for missed approaches?	Missed approaches are not included as a part of the FAR Part 77 requirements.
18.78	Runway 14/32	Runway Use	Were it determined that the 5000 foot RW 14/32 would have significantly less delay reduction benefits than postulated as a result of the activities of regional jets, in what ways would the proponents recommend revising the Airside Improvement Project?	The Supplemental DEIS/FEIR demonstrates that Runway 14/32 produces significant delay reduction benefits under all scenarios. Refer to Section 4.7.5, Sensitivity to Regional Jet Runway Use, in the Supplemental DEIS and Section 3.3.5.1 in this Final EIS.
18.79	Runway 14/32	Runway Use	Clarification is requested of the statement that RW 32 might serve "larger aircraft" under "ideal conditions". What aircraft, what conditions, and how many operations?	The runway is being designed as C-III. This category reflects approach speeds and wingspans of aircraft and includes such aircraft as the Canadair RJ and the Gulf Stream V. See FAA Advisory Circular 150/5300-13, Airport Design, for the complete list of aircraft and operation parameters for C-III aircraft. It should be noted that many of these C-III aircraft would be unable to land on Runway 32 due to runway length restrictions. Other than commuter aircraft (non-jets and RJs), minimal use is anticipated. Refer to Section 3.2.2 of the Supplemental DEIS/FEIR.
18.80	Runway 14/32	Construction Costs	Refers to cost being one of the factors in considering a determination (modification of FAA standards); however, no comparison of costs are offered for review and evaluation.	One thousand feet on center-line is provided as a safety area along almost the entire runway length. The end corners of the safety area are insignificant and would be located in the water. The option selected by the FAA avoids environmental impacts and was determined by FAA to meet an acceptable level of safety. The costs and environmental impacts of filling Boston Harbor to add the two end corners of the safety area in the water, while not precisely calculated, warrant against further consideration of that concept.

Community Advisory Committee Anastasia S. Lyman

Code	Topic 1	Topic 2	Comment	Response
18.81	Runway 14/32	Safety	A referenced factor identified in considering the modification of standards is "the types of aircraft reasonably expected to operate on the runway"; this safety consideration does not appear justified based on the discussion of the DELAYSIM model and the fleet mix that could use a 5,000 ft. runway. Massport should explain their rationale for the requested modification.	The runway is being designed as C-III, and FAA Advisory Circular 150/5300-13, Airport Design, includes the complete list of aircraft and operation parameters for C-III aircraft. It is expected that nearly all aircraft using Runway 14/32 will be commuter aircraft (non-jets and RJs). In considering the modification of standard, the FAA will consider the aircraft types that will utilize Runway 14/32. The assumed takeoff and landing distances for the various aircraft types in the Airside fleet forecasts are presented in Appendix D of this Final EIS. These assumptions were incorporated into all of the operational and environmental analyses.
18.82	Centerfield Taxiway	Environmental Impacts	Additional detail should be provided documenting how the proposed centerfield taxiway could be monitored to ensure that air quality and water quality standards north of Runway 33L would not be adversely affected from development of a centerfield taxiway system.	Major benefits of the Centerfield Taxiway are reductions in the number of Runway 22L departures delayed while idling on Taxiway November in the queue with 22R departures and the number of 4R arrivals waiting to cross 4L to Taxiway November. By reducing the number and duration of these delays, the air quality impacts north of 33L will be reduced. Since the taxiway is expected to decrease impacts north of 33L, no monitoring is planned at this time. Refer to Section 3.3 of the Draft EIS/EIR.
18.83	Centerfield Taxiway	Environmental Impacts	Figures 3.3- 1 through 3.3-4 should also depict the proximate adjacent residential communities impacted by taxiing operations.	Figures 4.3-1 and 4.3-2 of the Supplemental DEIS/FEIR depict the land use around Logan Airport. Depending on the active runways, taxiing aircraft primarily impact Winthrop and the Bayswater and Jeffries Point areas of East Boston.
18.84	Centerfield Taxiway	Safety	Wouldn't the centerfield taxiway lead to or require taxiing aircraft intending to depart on RW22L or having landed on either that runway or on 4R to cross active RW 4L/22R somewhere other than at its ends? Wouldn't that create or increase a safety risk?	Most arrivals on Runways 22L or 4R do not cross runway 4L/22R at the end, but at Taxiway Echo or Runway 33R, where they must queue up and wait to cross sequentially. The Centerfield Taxiway would allow these aircraft to taxi to other crossing points (e.g. Taxiways Charlie, Foxtrot, Quebec) where they could make simultaneous crossings thus reducing both taxiing delay and runway delay. Runway crossings are only made after ATC clearance, while the operations on 4L/22R are interrupted. Runway 22L departures would cross 22R on Taxiway Quebec or Foxtrot to the Centerfield Taxiway, immediately after a 22R departure while another 22R departure is taxiing into position for takeoff. There would be no change in the number of runway crossings, but they would be handled more efficiently. Since the total number of crossing events would be reduced, safety could be slightly enhanced.
18.85	Centerfield Taxiway	Gate Holds	Can gate hold procedures be used and required to avoid excessive queuing on the centerfield taxiway and TW N? Massport should address why this alternative was not considered as one of the alternatives in the Airside Improvement Project.	Gate holds and delayed pushback clearances are already used for departing aircraft at Logan Airport to reduce congestion and unnecessary ground idling. Under congested conditions, additional gate holding of departures would delay arriving aircraft waiting for gates, resulting in unnecessary passenger delays and no change in aircraft ground idling.
18.86	Centerfield Taxiway	Taxiway Delays	If a successful aircraft operations restraint/demand management program held operations at or below the threshold of "significant delay", would taxiway congestion continue to be a problem at Logan?	The FAA is committed to increasing the efficiency of air travel by expanding the capacity of the national air transportation system, and not by artificially constraining demand. When appropriate, the FAA currently exercises judgment in managing gateholds to preclude unnecessary queuing on taxiways. If a demand management program was successfully implemented, taxiway congestion would still be a problem, albeit slightly reduced. For example, without the Centerfield Taxiway, arrivals on Runways 4R or 22L would still have to queue up to cross 4L/22R sequentially, and heavy departures would still have to traverse the 22R departure queue to get to 22L. When appropriate, the FAA currently manages gate holds to prevent unnecessary queuing on the taxiways.

Community Advisory Committee Anastasia S. Lyman

Code	Topic 1	Topic 2	Comment	Response
18.87	Reduced Minimums	Impacts	The effect of "Reduced Approach Minimums" in encouraging additional landing attempts under reduced visibility or ceiling height on runways for which the reductions are proposed has not been enumerated. These communities should have clear and complete knowledge of how many additional bad-weather approaches will be initiated affecting them, and how many are likely to proceed to below the current approach minimums; under the range of operational numbers presented in the Report.	Appendix D of the Draft EIS/EIR analyzed the reduced minimums in greater detail using the 37.5M Low Fleet. According to the analysis presented, the changes in runway use due to the reduced minimums were extremely small. Examination of the detailed configuration use outputs shows that bad weather approaches to Runway 22L increased by 0.1 percent, bad weather approaches to Runway 33L increased by 0.1 percent, bad weather approaches to Runway 15R increased by 0.1 percent, and bad weather approaches to Runway 27 increased by a lesser amount (the DELAYSIM outputs do not present changes smaller than 0.1 percent). The reduced landing minimums will increase airfield safety by providing positive instrument guidance at low altitudes, by allowing aircraft to use runways more aligned with the prevailing wind during low visibility conditions, and by reducing the probability of missed approaches. In addition, reduced minimums will help improve annual PRAS goal achievement and provide dwell and persistence relief.
18.88	Reduced Minimums	Impacts	For Revere and Chelsea especially, the actual minimum vertical clearance of aircraft approaching and remaining within the glide slope tolerance, taking account of actual ground elevation, should be displayed.	To-scale diagrams of the approaches to Runways 27, 15 and 22L showing the terrain overflown are presented in Appendix D of the Draft EIS/EIR in Figures 1 to 3.
18.89	Reduced Minimums	Impacts	While the proponents seem to have effectively addressed the concern in many minds of aircraft flying lower over communities on approach, greater noise impact associated with the effects of cloud/fog on sound propagation and risk to those on the ground remain of concern. The latter may be associated with overhead passage of unseen aircraft; and it may arise from recognition that aircraft could be initiating a "missed approach" or "aborted landing" procedure at a lower altitude than is currently the case. In any event, serious consideration should be given to withdrawing the proposal since it offers only minimal relief from delay (less than 3%), and increases the hours of airport availability by about one-tenth of one percent.	The difference in approach minimums will have no effect on sound propagation under any circumstances. The primary purpose of reducing the approach minimums on Runways 22L, 27, 15R, and 33L is to promote safety by providing positive instrument guidance at low altitudes, by allowing aircraft to use runways more closely aligned with the wind during low visibility conditions, and by reducing the probability of missed approaches. The proposed reduced minimums at Logan Airport would be consistent with recommended practices as established in FAA Order 8260.3B, United States Standards for Terminal Instrument Procedures, and in effect at other comparable airports. While the reduced minimums will provide minimal delay reduction, the primary goal of reducing approach minimums is to enhance the safety and reliability of the airport. Runways proposed for reductions in minimums already have IFR minimums and pilots presently use these runways in poor and wet conditions. Reductions of these minimums to lower ceiling heights and visibility would have an insignificant effect on either aircraft power, flaps settings, or sound propagation, and therefore have no measurable impact on noise.
18.90	Alternatives	Part 161	Massport should justify why it would only choose a demand management strategy that is excluded from review under FAR Part 161. The purpose of FAR Part 161 is to allow local airports an ability to restrict operations for Stage 3 aircraft. If this is required to implement specific demand management strategies at Logan, then Massport should conduct a FAR Part 161 on the proposal. If Massport is committed to demand management as it has stated throughout the DEIS/Supplemental DEIS/FEIR then it should explore all options, not just peak period pricing because of the exclusion to FAR Part 161.	In its Section 61 Findings pursuant to the Massachusetts Environmental Policy Act, Massport committed to initiating the rule-making process to implement an enforceable peak period pricing program, or an alternative demand management program with comparable effectiveness, for Logan Airport. The objective of this program will be to avoid or reduce delays associated with overscheduling of Logan Airport's available capacity in good weather conditions. The goal is to have a demand management program in place before overscheduling conditions occur at Logan Airport. The FAA acknowledges that Logan Airport is one of the nation's most delayed airports and that Massport has committed to and will propose to implement a demand management program to reduce overscheduling delays. The FAA expects that any such program that is proposed for implementation will be consistent with applicable Federal law. The FAA is currently working with the U.S. DOT to establish national guidelines for demand management programs at U.S. airports. As part of this national effort, Logan has been selected as one of three airports to serve as a case study for U.S. airport demand management strategies.

Community Advisory Committee Anastasia S. Lyman

Code	Topic 1	Topic 2	Comment	Response
				Implementation of a peak period pricing program would require a rulemaking process but is exempt from an FAR Part 161 analysis. Depending upon the specifics, alternative demand management programs may require a Part 161 Study. Compliance with the FAR Part 161 process has proven difficult for airports because of the demanding legal requirements that must be satisfied for approval of mandatory access restrictions. The Part 161 process also requires that all reasonable alternatives to mandatory access restrictions be implemented first. To date, no airport has been able to obtain approval for Part 161 mandatory access restrictions.
18.91	Peak Period Pricing	37.5M High RJ Fleet	Massport should comment on the effectiveness of peak period pricing for the 37.5M High RJ Fleet. Chapter 4 addresses that peak period pricing is not effective for a high RJ fleet, thus, based on existing RJ activity at Logan (March 2001) and the obvious future increases in RJs for airlines serving Logan (see comments in Chapter 4), the demand management scenario is not useful as an option.	Peak Period Pricing is not expected to produce significant delay reduction benefits until airline overscheduling becomes a problem at Logan Airport. Section 4.7.1 showed that a $150 flat fee would have little impact on regional jets. However, the potential delay reduction benefits of an effective Peak Period Pricing program under a 37.5M High RJ fleet were described in Sections 4.7.1 and 4.7.2 of the Supplemental EIS. The analysis shows that an effective Peak Period Pricing program would reduce runway-related delays by 18 percent in the 37.5M High RJ Fleet scenario. Peak Period Pricing would be designed to impact the fleet that is in place at the time it is implemented. In its Section 61 Findings pursuant to the Massachusetts Environmental Policy Act, Massport committed to implement a peak period pricing program, or an alternative demand management program with comparable effectiveness, for Logan Airport. The objective of this program will be to avoid or reduce delays associated with overscheduling of Logan Airport's available capacity in good weather conditions. The goal is to have a demand management program in place before overscheduling conditions occur at Logan Airport.
18.92	Peak Period Pricing	Threshold	This section should include a broader vision of demand management techniques, of which peak period pricing is one option or could be one element. The Massport proposal should be refined and enhanced through the following measures: a) Lowering peaking threshold for determining congestion (show how selecting 100 ops/hour and 90 ops/hour compares with the selected 110 ops/hour in terms of delay reduction) b) Establish a peak period pricing analysis based on aircraft seat capacity. How might this affect delay? c) Put into place the peak period pricing or other demand management structure with a threshold "trigger" (causing the program to be instituted once the threshold is reached) instead of developing a program to identify when the trigger might be reached. Also, Massport should immediately implement a demand management technique as a deterrent to predictable forecasted congestion, instead of waiting for a hypothetical "trigger" to be reached.	Logan is an important part of the national air transportation system. The FAA is committed to enhancing safety and increasing the efficiency of the nation's air transportation system. It is the FAA's goal to satisfy the demand for air transportation by increasing the efficiency of existing capacity and expanding capacity where needed, rather than by artificially constraining demand. Lowering the peaking threshold to something below 100 operations per hour was raised during the SDEIS Panel Process and was considered by the FAA, but was determined to be inconsistent with FAA policies. In its Section 61 Findings pursuant to the Massachusetts Environmental Policy Act, Massport committed to initiating the rule-making process to implement an enforceable peak period pricing program, or an alternative demand management program with comparable effectiveness, for Logan Airport. The objective of this program will be to avoid or reduce delays associated with overscheduling of Logan Airport's available capacity in good weather conditions. The goal is to have a demand management program in place before overscheduling conditions occur at Logan Airport. The FAA acknowledges that Logan Airport is one of the nation's most delayed airports and that Massport has committed to and will propose to implement a demand management program to reduce overscheduling delays. The FAA expects that any such program that is proposed for implementation will be consistent with applicable Federal law. The FAA is currently working with the U.S. DOT to establish national guidelines for demand management programs at U.S. airports. As part of this national effort, Logan has been selected as one of three airports to serve as a case study for U.S. airport demand management strategies.

Code	Topic 1	Topic 2	Comment	Response
18.93	Alternatives	First Come/First Serve	Consider FAA management for takeoff control that attempts to limit the impacts of conflicts between large and smaller aircraft (speed, turbulence, maneuverability) such as grouping takeoffs into similar size/type sets. What delay reduction is realized? If such a procedure were determined to be feasible and beneficial with respect to demand management, then changes in community noise impacts should also be examined.	FAA is consistently reevaluating its procedures to enhance safety and reduce delays. However, this does not alleviate the need to implement the Airside Project. The traffic management proposal has been reviewed by the FAA and is not considered feasible since it would increase delays by requiring significant shifting of aircraft relative to their proposed departure times, adding to airfield congestion and delays in the departure sequence.
18.94	Peak Period Pricing	Alternatives	In lieu of Peak Period Pricing, consider and evaluate a system of flat pricing (charge per operation, rather than charge by weight) with differentials for daytime, early morning and evening, and nighttime operations; and possibly with a "small communities exemption".	The Airside Project is intended to provide delay reduction benefits at Logan Airport. Peak Period Pricing is designed to address the delay during periods of overscheduling, i.e. peak periods, and other times are not relevant. FAA and U.S. DOT are examining other demand management programs, including the concepts reflected in this comment, on a national level. As part of this national effort, Logan has been selected as one of three airports to serve as a case study for U.S. airport demand management strategies.
18.95	Alternatives	All Alternatives	Why limit the analysis of the 1998 conditions to the Preferred Alternative, why not include information about alternatives 1, 2, and 3 (not just preferred alternative and no action alternative).	The Preferred Alternative was analyzed using 1998 conditions to demonstrate the delay reduction benefits of the Preferred Alternative using actual operations data. In reality 1998 operations were very similar to the future 29M Low scenario. There were 507,000 aircraft operations at Logan in 1998 compared to 510,000 in the 29M Low fleet. The mix of jet and turboprop aircraft is also similar with 55 percent jets in 1998 compared to 60 percent jets in the 29M Low fleet. Since the fleets are very similar in terms of number of operations and aircraft mix, the delay reduction results for Alternatives 1, 2 and 3 would also be similar.
18.96	RJs	Increased Activity	This Rapid Growth in Regional Jets is a significant trend that substantially affects the need and justification of Runway 14/32. Substantial additional detail should be provided on this trend and its integration into the Logan market. At a minimum, information should include: a. Documentation of regional jet operations and type of aircraft in current Logan market (1998, 2000).The SDEIS/FEIR does not sufficiently document this significance of this change in the aviation industry and its effect on Logan operations.	Massport and the FAA have recognized and discussed in the Supplemental DEIS the rapid growth in regional jet aircraft within airline fleets, both nationally and at Logan. It was specifically because of this development that a new fleet scenario--the 37.5M High RJ fleet--was created and analyzed for inclusion in the Supplemental DEIS/FEIR. The purpose of this new fleet analysis was to assess whether the influx of RJ's into the U.S. and Logan markets would alter the findings and conclusions of the Draft EIS/EIR regarding the operational benefits and environmental impacts of the proposed airside improvements based upon fleet scenarios that had a far more limited representation of regional jet aircraft. The results of the analysis for the new 37.5M High RJ fleet, as described in Section 4.7 of the Supplemental DEIS/FEIR, were consistent with the findings from previously developed fleet scenario analysis. The new analysis showed that the Preferred Alternative continue to produced significant delay reduction benefits. Under the new 37.5M High RJ fleet scenario, the recommended airside improvements would have reduced annual Logan delays by approximately 30 percent. Environmentally, the shift to a higher proportion of RJ's does not imply increased noise impacts. Regional jets such as the Embraer 145 are 5-10 decibels quieter than recently manufactured Stage 3 jets on take-off and landing, and also quieter than many types of turboprops currently operating at Logan. Similar to the results from the previously analyzed fleet scenarios, under the High RJ fleet the Preferred Alternative would allow air traffic controllers to distribute more equitably flight activity over the geographic region surrounding Logan Airport, causing a reduction in the number of people exposed to the highest noise levels (exceeding 75 and 70 db DNL). In addition, by improving airfield efficiency and reducing delays, the Preferred

Code	Topic 1	Topic 2	Comment	Response
				Alternative would result in a reduction in emissions of CO2, NOx, total VOC's, and PM10 under the 37.5M High RJ Fleet. It should be noted that the CAC analysis of the April 2001 OAG presented in this table uses the terms "at least XX flights per day" and "at least XX flights per week" to result in a daily RJ mix of 35 Embraers, 17 CRJs, and 26 DRJs (78 daily departures), while Massport's own pull of the April 2001 schedule (provided to the CAC consultants April 30, 2001) shows 109 daily departures on a typical weekday (Wednesday): 66 Embraers, 17 CRJs, and 26 DRJs. This indicates that the CAC has underestimated the Embraer RJ operations at Logan.
18.97	RJs	Increased Activity	Information of RJ growth should include: Runway length requirements of regional jets (in addition to Jim Muldoon's analysis contained in the Appendices). The Supplemental DEIS/FEIR underestimates the integration of RJs into aircraft fleets and its resulting affect on the effectiveness of proposed Runway 14/32.	Massport and the FAA have recognized and discussed in the Supplemental DEIS/FEIR the rapid growth in regional jet aircraft within airline fleets, both nationally and at Logan. It was specifically because of this development that a new fleet scenario--the 37.5M High RJ fleet--was created and analyzed for inclusion in the Supplemental DEIS/FEIR. The purpose of this new fleet analysis was to assess whether the influx of RJ's into the U.S. and Logan markets would alter the findings and conclusions of the Draft EIS/EIR regarding the operational benefits and environmental impacts of the proposed airside improvements based upon fleet scenarios that had a far more limited representation of regional jet aircraft. The results of the analysis for the new 37.5M High RJ fleet, as described in Section 4.7 of the Supplemental DEIS, were consistent with the findings from previously developed fleet scenario analysis. The new analysis showed that the Preferred Alternative continue to produced significant delay reduction benefits. Under the new 37.5M High RJ fleet scenario, the Preferred Alternative would have reduced annual Logan delays by approximately 30 percent. Environmentally, the shift to a higher proportion of RJ's does not imply increased noise impacts. Regional jets such as the Embraer 145 are 5-10 decibels quieter than recently manufactured Stage 3 jets on take-off and landing, and also quieter than many types of turboprops currently operating at Logan. Similar to the results from the previously analyzed fleet scenarios, under the High RJ fleet the Preferred Alternative would allow air traffic controllers to distribute more equitably flight activity over the geographic region surrounding Logan Airport, causing a reduction in the number of people exposed to the highest noise levels (exceeding 75 and 70 db DNL). In addition, by improving airfield efficiency and reducing delays, the preferred alternative would result in a reduction in emissions of CO2, NOx, total VOC's, and PM10 under the 37.5M High RJ Fleet.
18.98	RJs	Increased Activity	Information on RJ growth should include: Future expansion of regional jets in the Logan market including type of regional jet. There is little discussion of the future trends (through 2015) of the increased reliance on the RJ fleet at Logan, both for existing airlines and future airlines operating at Logan. According to Airclaims data (an industry publication that contains aircraft fleet information) on future deliveries of RJ aircraft to airlines currently or possibly operating at Logan, there is wide spread increase of RJs in airlines fleets.	The CAC's analysis of current RJ orders by U.S. airlines fails to consider which carriers are likely to have a significant presence at Logan Airport. American and Delta are currently the leading RJ operators at Logan Airport. Both airlines are undertaking terminal redevelopment projects, and each has forecast a significant number of future RJ operations at Logan Airport. American has projected its future RJ fleet at Logan Airport to be comprised exclusively of Embraer models, while Delta's future RJ fleet projection is predominately Dornier regional jets (approximately 75 percent), with a much lower presence of the Canadair CRJ. USAirways, currently Logan Airport's 3rd leading operator of regional jets currently operates only Embraer ERJ's at Logan Airport through its regional affiliate, Chautauqua Airlines. The RJ fleet and orders of "carriers likely to operate at Logan" as described by the CAC are heavily weighted by the fleets of Comair and Atlantic Southeast Airlines (ASA), two of Delta's regional carrier affiliates that both operate substantial

Code	Topic 1	Topic 2	Comment	Response
				fleets of Canadair CRJ's but have only minimal presence at Boston. Atlantic Southeast's network is focused at Atlanta and Dallas/Ft. Worth and the carrier has no flights at Logan Airport. Comair RJ flying is concentrated at Cincinnati and the carrier operates only four of its system wide 770 daily RJ departures at Boston (July 2001). Delta's principal regional partner at Boston is ACJet which operates 42 of the carrier's 46 daily RJ departures from Logan Airport, all with Dornier 328Jets. By including carriers with industry leading fleets of CRJ aircraft but who have little or no presence at Logan Airport, the CAC analysis substantially exaggerates the likely future role of the Canadair CRJ at Logan Airport. This overstatement is relevant since the FAA independent review of probable RJ use of the proposed 5,000 foot runway indicated that all RJ models except the CRJ were likely to use the runway.
18.99	RJs	Increased Activity	...The predominance of new aircraft purchases is for CRJs and ERJ, not DRJs. This is absolutely vital information that the Supplemental DEIS/FEIR should reveal since Appendix C of the report discusses that CRJs will not use Runway 14/32, and use by ERJ is limited to dry weather conditions. Of the information presented above, new DRJ aircraft is only 6% of the total new aircraft purchased.	Refer to Response to Comment 18.98.
18.100	RJs	Increased Activity	Information on RJ growth should include: Additional discussion on destinations. Based on April 2001 Official Airline Guide, regional jet service is available to/from Logan for Toronto, Newark, JFK, Columbus, Montreal, Columbia (SC), Burlington, Myrtle Beach, Jacksonville, Dulles, Raleigh, Rochester, Buffalo, Chicago, Ottawa, and Cleveland, in addition to the markets mentioned in the Supplemental DEIS/FEIR including Richmond, Norfolk, Greensboro, Nashville, Philadelphia and Indianapolis. The Supplemental DEIS/FEIR underestimates the current regional jet activity at Logan and/or does not discuss the substantial increases in RJ activities from 1998 to present day.	This is a project issue, refer to the discussion in Chapter 3 of this Final EIS. Section 4.2.2.2 of the Supplemental DEIS/FEIR specifically discusses the recent rapid growth in regional jets (RJs) at Logan Airport. Carriers have continued to add new regional jet services at Logan Airport since the publication of the Supplemental DEIS/FEIR. Section 4.2.24 of the Supplemental DEIS/FEIR demonstrates that the trend of increased regional jet activity at Logan Airport is expected to continue into the future as regional carriers replace their turboprop fleets with newer RJs. A new High RJ Fleet was specifically developed and analyzed in the Supplemental DEIS/FEIR to incorporate this trend into the Airside analysis. While there were only 11,140 RJ operations at Logan Airport in 1999, 184,000 RJ operations are projected in the 2015 High RJ fleet forecast.
18.101	RJs	Peaking	There should be additional discussion about the peaking effect that regional jets may create in the future. Page 4-15 states the "growth in regional jets and carrier plans to develop individual regional carrier networks may suggest a shift towards a high fleet scenario." This condition should be discussed in additional detail since this statement would suggest that a demand management alternative would have a greater fleet at delay reduction based on the growth of RJs in the Logan market.	The peaking characteristics of the 37.5M High RJ fleet are described in Section 4.7 of the Supplemental DEIS/FEIR. Figure 4.7-3 depicts the August weekday hourly profile for the High RJ fleet, with and without Peak Period Pricing. Further, the delay reduction results described in Section 4.7.2 indicate that the 37.5M High RJ fleet would trigger implementation of some form of Peak Period Pricing and that Alternative 1 (all actions including peak period pricing) would produce the greatest delay reduction benefits. However, Logan Airport is not forecast to reach the 37.5M High RJ scenario until 2015. While the 2015 High RJ Fleet is projected to have 184,000 RJ operations (and 585,000 total operations), there were only 38,000 RJ operations (and 488,000 total operations) at Logan Airport in 2000. In its Section 61 Findings pursuant to the Massachusetts Environmental Policy Act, Massport committed to implementing an enforceable peak period pricing program, or an alternative demand management program with comparable effectiveness, for Logan Airport. The objective of this program will be to avoid or reduce delays associated with overscheduling of Logan Airport's available capacity in good weather conditions. The goal is to have a

Code	Topic 1	Topic 2	Comment	Response
				demand management program in place before overscheduling conditions occur at Logan Airport. The FAA acknowledges that Logan Airport is one of the nation's most delayed airports and that Massport has committed to and will propose to implement a demand management program to reduce overscheduling delays. The FAA expects that any such program that is proposed for implementation will be consistent with applicable Federal law. The FAA is currently working with the U.S. DOT to establish national guidelines for demand management programs at U.S. airports. As part of this national effort, Logan has been selected as one of three airports to serve as a case study for U.S. airport demand management strategies. Refer to Chapter 2 of this Final EIS for a more detailed discussion.
18.102	RJs	Increased Activity	The introduction of regional jets in the national aviation system and at Logan is a significant change in the assumptions and analysis of the DEIS/EIR. The Supplemental DEIS/FEIR makes light of the need to include a scenario reflecting the existing and future RJ fleet.	A new 37.5M High RJ Fleet was specifically developed and analyzed in the Supplemental DEIS/FEIR to reflect the growing presence of regional jets in the national aviation system and at Logan Airport. The Supplemental DEIS/FEIR present operational, noise and air quality impacts for all five project alternatives for the 37.5M High RJ fleet scenario.
18.103	Fleet Mix/Forecast	FAA TAF	Describe the FAA's Terminal Area Forecast (TAF) and how the forecasts are derived and the input from the GEIR.	The FAA's Terminal Area Forecast (TAF) contains historical and forecast passenger enplanements and aircraft operations for U.S. airports. The aviation activity forecasts are developed from historical relationships between airport activity measures and local and national variables that drive aviation demand. The 31 large hub commercial service airports, including Logan Airport, are subject to a more in-depth review by FAA economists. The review of large hub forecasts includes the consideration of local economic variables (i.e., personal income, and employment), the mix of originating and connecting traffic, and air fares. In addition, average aircraft size and load factor assumptions are also reviewed. The new 37.5M High RJ forecast introduced in the Supplemental DEIS/FEIR was initially reported on in the 1999 ESPR submitted to MEPA in December 2000.
18.104	Fleet Mix/Forecast	PRAS	Massport has indicated that PRAS goals are also key inputs for the airside delay analysis; but this is not mentioned as a key input.	Supplemental Draft EIS/EIR and Supplemental Draft EIS Section 4.3, Preferential Runway Advisory System (PRAS) of the Supplemental DEIS, states "Logan's Preferential Runway Advisory System (PRAS) goals underlie the delay and environmental modeling of the No Action (Base Case) and Action alternatives presented in the Airside Project Draft EIS/EIR." The section goes on to describe the history of PRAS, PRAS goals and objectives, historic PRAS conformance, and a comparison of historic to modeled PRAS performance. The Draft EIS/EIR and Supplemental Draft EIS also clearly stated that PRAS was an input to the DELAYSIM model. Section 4.3.2, Airside Delay Modeling, in the Draft EIS/EIR and Supplemental Draft EIS clearly lists the factors considered by DELAYSIM to select runway configurations. The 5th factor listed reads, "Annual runway use targets and goals for noise dwell and persistence developed for the current Preferential Runway Advisory System (PRAS)".
18.105	Ground Access	Terminal Capacity	There should be data on capacities of the several terminals, both in terms of gates and passenger facilities. (N.B., there are environmental review documents for Terminals A, B and E, which should be incorporated in part to show the existing and proposed passenger handling capabilities.)	The Preferred Alternative of the Airside Improvements does not increase the airfield's maximum capacity which ultimately limits the scheduling of airline services. The EIS analysis examined runway use, delays and noise impacts for a range of future demand levels, and all show that the Preferred Alternative produces substantial delay reduction benefits. Nevertheless, the need for ongoing and future improvements to the terminals is a separate issue, which is not dependent on the outcome of the Airside Improvements, since the Improvements Projects will not change the underlying passenger demand for travel at Logan.

Community Advisory Committee Anastasia S. Lyman

Code	Topic 1	Topic 2	Comment	Response
18.106	Ground Access	Ground Access Management Plan	The traffic mitigation commitments contained in the Central Artery EIS/R require development of a number of alternatives to automobile access to Logan, most of which have not been implemented. The Parking Freeze strictly limits the number of parking spaces at and serving the airport, placing additional limits on access by private vehicle. These limits are highly inconsistent with the projected passenger demands, which should be revised to reflect the reality of the ground access situation at Logan. Aircraft operations projections, and therefore delay projections, should be revised.	The Airside EIS analyzes the same forecast activity levels as the 1998 Annual Update and the 1999 ESPR. Since the Preferred Alternative is not expected to increase the demand for Logan Airport above the demand level for the No Action scenarios, which were already analyzed in the ESPR/GEIR, the Preferred Alternative would not have any impact on Logan Airport ground access. While not related to this EIS or the FAA's mitigation commitments for the Airside Project, Massport has an extensive Ground Access Management Plan. The goals of the Ground Access Management Plan are to: a) increase the overall efficiency of the metropolitan transportation system through interagency coordination; b) increase annual air passenger HOV mode share to 35.2 percent by the time annual air passengers reach 37.5 million; c) reduce employee reliance on commuting alone by private automobile; d) provide adequate long-term parking within the limits of the Logan Airport Parking Freeze; and e) improve management of ground access and infrastructure through technology. Key achievements in reaching those goals include: 1) Establishment of the Logan Airport Transportation Management Association (TMA). Massport provided subsidies for TMA members on Logan Express and MBTA. TMA members ride the Rowe's Wharf Water Shuttle for free. Massport hired professional TMA firm to operate the Logan Airport TMA. 2) Massport's Logan Express bus service achieved record ridership of more than one million passengers in 1998 and 1999. Massport recently announced that a fourth Logan Express facility will be established in Peabody, MA. 3) Construction of the Woburn Regional Transportation Center which includes 900 new parking spaces for Logan Express was completed in 2000. 4) Planning continues for the Airport Intermodal Transit Connector which will provide a direct link between Logan Airport and South Station/Red Line. 5) Massport initiated the Logan DART bus service between Logan Airport and South Station in November 2000. 6) Massport continues to coordinate with the MBTA in planning for the redesigned new Airport Station to include wide escalators, flight information monitors, and other air passenger amenities. 7) Massport continues to operate free shuttle buses between Airport Station, the Water Shuttle dock, and the passenger terminals. 8) Massport implemented Logan Direct service from the South Shore. 9) Massport markets and advertises HOV services through use of the 1-800-23LOGAN telephone service and other media. 10) Massport continues to implement the commercial vehicle lane, Neptune Road exit ramp peak period forced turnaround, local street closures, and traffic volume restrictions at Maverick Street.

Code	Topic 1	Topic 2	Comment	Response
				11) Continued traffic monitoring, curbside monitoring, and traffic control improvements. 12) Continued development effort for Advanced Traveler Information Systems and Automatic Vehicle Identification (AVI) to monitor commercial vehicle activity. Refer to the Logan Airport 1999 ESPR which further describes Massport's Ground Access Management Plan. The Logan Airport 1999 ESPR and subsequent EDRs provide annual reports on the status of Massport's Ground Access Management Plan. The ESPR and former GEIR/Annual Updates are specifically incorporated by reference in the Airside Project EIS Documents as background information.
18.107	Fleet Mix/Forecast	Aircraft Types	A more detailed itemization of the fleet mix (by aircraft type) for the 37.5M High RJ operations forecast should include in a table.	Refer to Appendix D of this Final EIS.
18.108	RJs	Forecasts	The 29M Low and 29M High Fleets do not sufficiently reflect the developing presence of regional jets in the Logan market. This is a serious deficiency, and one that should have and needs to be corrected since the "Supplemental DEIS/FEIR focuses on the 29M Low Fleet for the operational and environmental analyses".	The 37.5M High RJ Fleet and the 29M RJ Fleet were analyzed to determine how the recent increase in regional jet usage at Logan Airport, and possible trend for increased future use of regional jets might affect the analysis of future operations and environmental impacts and benefits of the Airside Project. The purpose of this new fleet analysis was to assess whether the influx of RJ's into the U.S. and Logan markets would alter the findings and conclusions of the Draft EIS/EIR and Supplemental Draft EIS regarding the operational benefits and environmental impacts of the proposed airside improvements based upon fleet scenarios that had a more limited representation of regional jet aircraft. The results of the analysis for the new 37.5M High RJ fleet, as described in Section 4.7 of the Supplemental DEIS, were consistent with the findings from previously developed fleet scenario analysis. The new analysis showed that the Preferred Alternative continue to produce significant delay reduction benefits. Under the new 37.5M High RJ fleet scenario, the recommended airside improvements would have reduced annual Logan delays by approximately 30 percent. Environmentally, the shift to a higher proportion of RJ's does not imply increased noise impacts. Regional jets such as the Embraer 145 are 5-10 decibels quieter than recently manufactured Stage 3 jets on take-off and landing, and also quieter than many types of turboprops currently operating at Logan. Similar to the results from the previously analyzed fleet scenarios, under the 37.5M High RJ fleet the Preferred Alternative would allow air traffic controllers to distribute more equitably flight activity over the geographic region surrounding Logan Airport, causing a reduction in the number of people exposed to the highest noise levels (exceeding 75 and 70 db DNL). In addition, by improving airfield efficiency and reducing delays, the preferred alternative would result in a reduction in emissions of CO2, NOx, total VOC's, and PM10 under the 37.5M High RJ Fleet. Even though the analysis of the 37.5M High RJ scenario produced results that were similar to those of the original fleet forecasts and still clearly demonstrated the benefits of the Preferred Alternative, an additional near-term 29M RJ fleet was analyzed in this Final EIS. The 29M RJ fleet falls between the 29M Low and 37.5M High RJ fleets in terms of the number of regional jet aircraft. The results of the 29M RJ analysis, as described in

Community Advisory Committee Anastasia S. Lyman

Code	Topic 1	Topic 2	Comment	Response
				Section 3.4 of this Final EIS, are consistent with the findings of the Draft EIS/EIR and Supplemental DEIS/FEIR, i.e., the Preferred Alternative produces substantial delay reduction benefits and provides the opportunity to achieve a more geographically balanced distribution of Logan Airport's flight activity and noise impacts.
18.109	RJs	Forecasts	Regional jets have been in the aircraft fleet as early as 1994, and most of the airlines operating at Logan introduced regional jets in the 1997 - 1999 timeframe. The DEIS/DEIR used 1993 as the base year and the fleet forecasts missed including regional jets. This was one of the reasons why 1993 is inappropriate for the EIS/EIR analysis. Massport has indicated that they were supplementing and updating the analysis of Logan operating conditions, but clearly the 29M High Low Fleets do not incorporate the radical change in the industry resulting from regional jet introduction. At the time of the release of the Supplemental DEIS/FEIR, the airlines likely to serve Logan have sufficient regional jets in their fleets to warrant a significant change in the 29M fleet to "bracket all conditions". Massport has failed to include this information.	The Airside EIS did assess the introduction of regional jets into the U.S. airline fleet. A new future fleet scenario--the 37.5M High RJ fleet--was created and analyzed in the Supplemental DEIS/FEIR to evaluate the operational and environmental benefits of the Airside improvement projects under a high regional jet scenario. The 37.5M High RJ analysis produced results that were similar to the analysis of the original fleet forecasts, and still clearly demonstrated the benefits of the Preferred Alternative. In addition, a near-term 29M RJ fleet was analyzed in this Final EIS to examine the near-term impacts of regional jets. The 29M RJ fleet falls between the 29M Low and 37.5M High RJ fleets in terms of the number of regional jet aircraft. The results of the 29M RJ analysis, as described in Section 3.4 of this Final EIS, are consistent with the findings of the Draft EIS/EIR and Supplemental DEIS/FEIR, i.e., the Preferred Alternative produces substantial delay reduction benefits and improves the ability to achieve a more geographically balanced distribution of Logan Airport's flight activity and noise impacts.
18.110	RJs	Forecasts	The development of a 37.5M High RJ Fleet infers that the regional jet market is a future market to be considered in the long-term planning forecasts. This is inaccurate. The regional jet market is already a significant presence as evidenced by the table below. Massport is trying to use 1993 conditions to reflect current conditions. The facts are: 1) The airlines have already significantly invested in regional jets, 2) These regional jets are active in the Logan market, 3) The airlines are continuing to significantly invest in regional jets. Thus, near-term planning forecasts are invalid if they do not include a significant percentage of regional jets in the fleet.	Refer to response to Comments 18.108 and 18.109.

Community Advisory Committee Anastasia S. Lyman

Code	Topic 1	Topic 2	Comment	Response
18.111	RJs	Forecasts	The long-term planning forecasts do not sufficiently reflect the presence of RJs in the market place. The 37.5M Low forecast assumes 5% RJs in the passenger fleet, the 37.5 M High assumes 3% RJs in passenger fleet, the 45 M High assumes 4% in the passenger fleet. All these assumptions are too low... These percentages reflect today's RJ activities as a percentage of the total passenger fleet assumed in 2010 (for the 37.5M passenger scenarios) and "sometime after 2020" for the 45M passenger scenario. Since Logan is not dominated by any one airline, it is unrealistic to think that there will be fewer than 15% of RJs in any future fleet...The long-term forecasts are supposed to "bracket" the range of fleet possibilities; the updated forecasts reflected in the Supplemental DEIS/FEIR do not do so.	The 37.5M High RJ fleet includes 184,000 regional jets, 31 percent of the total forecast fleet. This fleet was specifically added to the Supplemental DEIS/FEIR to assess the implications of a future fleet with a high percentage of regional jets. The Supplemental DEIS/FEIR assesses the operational and environmental impacts of all project alternatives for the 37.5M High RJ fleet. The analysis indicates that a high presence of RJs in a long-term future fleet does not alter the main conclusions of the Airside analysis or the selection of the Preferred Alternative. Also refer to response to Comment 18.108.
18.112	RJs	Forecasts	The 37.5M High RJ Fleet forecasts the percentage split between and the mainline jets and the regional jets of 53% and 35%, respectively. This split seems to underestimate a truly high RJ fleet scenario. In the 37.5M High RJ Fleet, Massport assumes that regional jet aircraft replace "most turboprops and a portion of the conventional narrowbody jets with less than 120 seats" but does not include the additional demand created by passengers for non-stop service and greater frequencies that the RJs will spur and be responded to by airlines. Massport indicates that "growth in regional jets and carrier plans to develop individual regional carrier networks may suggest a shift towards a High Fleet Scenario." This statement reflects the possibility that in the future Logan may act as an RJ hub for one or more airlines, or at the least, have substantial RJ activities by multiple airlines...the 37.5M High RJ fleets more approximately a midpoint forecast of a future fleet mix for Logan, not a high RJ condition. The fleet mix should be reevaluated to increase the percentage of RJ operations and decrease the mainline jet operations to reflect a true high RJ fleet scenario.	The long-term 37.5M High RJ fleet forecast prepared for the Supplemental DEIS reflects the increasing presence of regional jets in airline fleets both nationwide and at Logan Airport. FAA and Massport specifically considered the plans of carriers that are likely to have a significant presence at Logan Airport. American and Delta, recently the leading RJ operators at Logan Airport, are both undertaking terminal redevelopment projects, and each has forecast a significant number of future RJ operations at Logan Airport. These carrier projections along with the fleet plans of other major Logan Airport regional carriers are reflected in the 37.5M High RJ forecast. Certain small air service communities can only support turboprop service to Logan Airport because of low or seasonal passenger demand, short air distances and runway limitations. Thus, future Logan fleets are expected to continue to include some turboprop aircraft. In addition to the long-term 37.5M High RJ fleet, this Final EIS includes operational analysis of a new, near-term 29M RJ fleet. See Section 3.4 of this Final EIS.

Community Advisory Committee Anastasia S. Lyman

Code	Topic 1	Topic 2	Comment	Response
18.113	Fleet Mix/Forecast	Cargo	Massport's reliance on historic growth trends at Logan has not been very accurate at identifying future changes in the aviation industry (see previous comments on underestimation of RJ use at Logan). Since the entire industry is predicting substantial cargo growth (4-6% annual growth), Massport needs to more fully justify their below-national average cargo growth forecasts (2% annual growth).	In addition to Logan's historic growth rate relative to industry trends, land constraints at Logan and the growth in all-cargo activity at regional airports were also considered during forecast development. These factors support a below average growth rate for future all-cargo operations at Logan Airport. In 2000, Logan Airport handled 12,282 all-cargo aircraft operations, which represent 2.5 percent of the airport's total aircraft movements. Since 1990, all-cargo operations at Logan have increased by less than half the national rate at 2.8 percent a year compared to 7 percent average annual growth nationwide. All-cargo activity, particularly the growing small package segment served by the integrated carriers, requires substantial groundside facilities. Logan has limited space available for these uses, and little room to accommodate growth. Several all-cargo carriers have already started to expand operations at the regional airports. In the past five years, FedEx, UPS, and Airborne Express have dramatically increased their presence at the Manchester Airport. Each carrier has built new or additional facilities and increased the frequency and size of their aircraft at Manchester, making it the third largest cargo airport in New England.
18.114	RJs	Cargo	The increased use of regional jets in the Logan market may also have an affect on cargo activity and operations at Logan. Since RJs do not have substantial capacity in the "belly" of the aircraft, that mainline jets do, the amount of cargo carried on RJs is very limited. Thus, if the existing and growing future demand for cargo must be satisfied at NE's primary cargo airport, Logan, additional cargo-only operations are likely to occur to meet the cargo volume demand that can not be accommodated on RJs and other mainline aircraft. Massport's 37.5M High RJ fleet does not appear to account for this effect of RJs on cargo operations.	The 37.5M High RJ fleet forecast assumes that RJs replace most turboprops and a portion of conventional narrowbody jets with less than 120 seats. Neither turboprops nor conventional narrowbody jets carry a significant amount of cargo. Since the turboprops that RJs are replacing do not now carry a significant amount of the cargo that flows through Logan, RJs are not expected to displace a significant amount of belly cargo capacity at Logan Airport.

Community Advisory Committee Anastasia S. Lyman

Code	Topic 1	Topic 2	Comment	Response
18.115	Fleet Mix/Forecast	General Aviation	The 37.5M High RJ forecast also increases the general aviation activity forecasts to "reflect recent Logan trends." All general aviation fleet in the 37.5M fleet forecast are forecast to land on proposed runway 14-32 (total of 41,000 operations). Why is Massport not addressing the implications of such significant increased general aviation activity on delay at Logan? Massport has not presented any concepts or alternatives to change this trend, such as having regional airports accommodate demand for general aviation activities. In fact, many communities are in the process of imposing restrictions on general aviation activities in order to constrain demand specifically for business jets. Massport should be required to treat this component in the regional airport analysis and thus provide a means to reduce the forecasts for general aviation operations.	Compared to historic growth in general aviation (GA) activity, the 37.5M High RJ fleet assumes only modest growth in GA operations. From 1990 to 2000, general aviation operations at Logan Airport increased at an average annual rate of 3.5 percent per year, from 24,976 in 1990 to 35,233 in 2000. In the 37.5M High RJ forecast, GA operations are forecast to increase at just 1.0 percent per year increasing from 35,233 in 2000 to 41,057 in 2015. Logan Airport accommodates only a small portion of the region's GA activity. According to the FAA's Terminal Area Forecast, actual data for 1999 show that only 5 percent of the general aviation activity that occurred at airports within I-495 was handled by Logan Airport. Hanscom Field, the region's largest GA reliever airport, accommodated 212,000 GA operations, more than 6 times the GA activity at Logan Airport. Other than Hanscom, there are four other FAA designated GA reliever airports that handle over 600,000 GA operations annually. Even capacity-constrained airports, such as New York LaGuardia, accommodate some GA activity. At LaGuardia, six out of approximately 80 hourly slots are allocated to GA aircraft. It is not true that all of the forecast general aviation operations in the 37.5M High RJ fleet will occur on Runway 14/32. As for all aircraft operations, runway usage by general aviation aircraft is determined by a number of factors including the prevailing wind direction, anticipated demand, PRAS and other noise abatement rules. No airport proprietor is permitted to implement an access restriction such as a GA ban without following the procedures of FAR Part 161. Only measures of a totally voluntary nature that have no penalty associated with them are excluded from Part 161 requirements. The FAA's Part 161 process is a difficult process for airports to undertake because of the demanding legal requirements that must be satisfied to obtain approval for access restrictions. To date, no large air carrier airport has been able to obtain approval for a Part 161 mandatory access restriction. Naples, a general aviation airport in Florida, submitted a Part 161 application, proposing a 24-hour ban on Stage 2 aircraft under 75,000 pounds (general aviation aircraft), to the FAA in June 2000. The FAA ruled that the submission was incomplete. Naples is in the process of performing supplemental analysis requested by the FAA. As a result of the proposed ban, Naples is also facing a civil lawsuit by the National Business Aircraft Association (NBAA) on the basis that the ban is discriminatory.

Community Advisory Committee Anastasia S. Lyman

Code	Topic 1	Topic 2	Comment	Response
18.116	Capacity	Airside	Massport asserts that Logan's normal airfield capacity is approximately 120 operations per hour and this capacity is available at Logan approximately 80% of the time. The runway configurations presented in Section 1 of the Supplemental DEIS/FEIR and the FLAPS Operational Capacity indicates the following: Based on Wind, Configuration FLAPS Capacity of year Available NE Wind using R/W 4L, R/W 4R, and R/W 9 120 ops/hour 18% SW Wind using R/W 22L, R/W 22R, and R/W 27 103 ops/hour 28% E/SE Wind using R/W 15R, R/W 15L, and Runway 9 75ops/hour 17 % Light/Moderate NW Wind using R/W 27 and R/W 33L 83 ops/hour 34% Strong NW Wind using R/W 33L 60 ops/hour 3%* Based on the above table, 120ops/hour is only available approximately 18% of the time based on wind conditions, other wind conditions dictate that the airport's capacity is less than 120 ops per hour. (The weighted average of the above FLAPS VAPS capacities is 93 operations per hour.) Massport should state that high capacity configurations (those accommodating over 100ops/hour) could be available 80% of the year if attainment of the PRAS goals is ignored despite the commitments toward increased attainment of those goals of Massport and the FAA.	The comment uses general wind direction to represent runway availability, without considering specific wind direction and wind speed. Configuration availability is based on crosswind and tailwind restrictions for each runway. Thus, while winds are from the northeast 18 percent of the time, the 4L/R&9 VFR runway configuration is available approximately 56 percent of the time (using the ten-year weather file). As a numerical example of the 120 operations per hour calculation, consider the DELAYSIM analysis of the 29M Low No Action scenario. Since the numbers presented in the comment represent operational capacities, average operational capacities will be presented (recall that these are 10 percent lower than the full modeled capacity used for delay calculations). When the maximum available capacity is considered for each hour of the ten-year file (while still obeying all noise, wind, and other operational restrictions including giving nighttime configurations priority over daytime configurations), the average operational capacity of the airport is 102 hourly operations (107 under VFR conditions). Note that if the operational capacities are converted to full modeled capacity (removing the 10 percent buffer), the resulting average VFR capacity of the airfield is approximately 120 hourly operations (119 to be exact). This capacity represents all VFR weather conditions and all VFR runway combinations, and is consistent with FAA's Airport Capacity Benchmark Report 2001, which determined that Logan has an existing good weather capacity of 118 to 126 operations per hour.
18.117	Capacity	Increased	The new runway, if used 10-days per year is likely not to induce additional demand and only reduce delay during those 10 days. However, Massport's intended use of R/W 14/32 will increase the annual service volume of the airport, allow the tower to use configurations with higher capacities, that ultimately allows the total volume of traffic at Logan to increase; thereby not making this project capacity neutral.	The 10 days referred to is the estimated number of days that Logan is forced to operate with just a single runway. However, Runway 14/32 would also provide delay reduction benefits when Logan is forced to operate on just two runways, and thus would be used more often than 10 days per year. The Preferred Alternative, specifically unidirectional Runway 14/32, will not increase Logan Airport's normal airfield capacity of approximately 120 operations per hour which is available about 80 percent of the time. The proposed unidirectional runway will substantially reduce delays that occur during northwest wind conditions, and will represent a real benefit to the passengers and airlines that currently experience them. However, these wind conditions and the associated delays are not predictable and hence are not considered by air carriers when scheduling services or by passengers when booking their trips. Therefore, proposed new Runway 14/32 will not stimulate growth in Logan Airport demand above the rates that would have occurred absent the runway. As has historically been the case, growth in Logan Airport demand will be principally driven by local and national economic conditions, demographics, competition and pricing within the airline industry, and the distribution of airline services between Logan Airport and the surrounding regional airports.

Community Advisory Committee Anastasia S. Lyman

Code	Topic 1	Topic 2	Comment	Response
18.118	Induced Demand	Regional Jet Hub	Massport's justification that Logan is principally an O&D market is currently valid; however, discussions about carriers' development of regional carrier networks opens the possibility that Logan could become a mini-hub for regional jets, not to accommodate transferring passengers, but for consolidating airline fleet activities (fleet maximization, maintenance, etc.) at a major airport. In any event, Massport should discuss this potential in terms of the new runway inducing demand at Logan.	It is highly unlikely that a regional carrier would develop an RJ hub at Logan. Historically, only carriers with route systems based in New England have developed regional hubs at Logan, and these carriers (such as Cape Air) have little or no reliance on regional jet aircraft. The short flight distances, low market densities, and runway constraints at many New England airports limit the utility of a regional jet hub at Logan. Airlines with heavy investments in regional jets have significantly broader route structures. The deployment of regional jets and other aircraft at Logan as well as other airports is principally based on market demand. Logan already has four runways that can accommodate regional jet aircraft and there is no reason to conclude that the availability of an additional runway capable of handling these aircraft for arrivals would result in Logan becoming a mini-hub for regional jets.
18.119	Capacity	Increased	Since Massport has not introduced any demand management measures to limit the demand for services at Massport and further states that the historical delay has had no impact on air carrier or passenger use of Logan, the proposed runway does indeed allow a greater overall capacity of Logan that will accommodate increases in operations.	By preventing the drop in capacity that currently occurs when northwest winds force Logan to operate to the northwest, Runway 14/32 will increase the amount of time that Logan Airport can operate on three runways. It will therefore increase the average capacity of the airport. It will not, however, increase Logan's normal three-runway capacity of approximately 120 hourly operations that is available around 80 percent of the time. This capacity level is consistent with the FAA's Airport Capacity Benchmarking Report 2001, which states that Logan's good weather capacity is between 118 and 126 hourly operations and that construction of Runway 14/32 will not increase this capacity. Making Logan's normal three-runway capacity level available more often increases the reliability of the airport and reduces delays. Since Runway 14/32 will not increase Logan's normal three-runway capacity, it will not increase aircraft operations or aircraft emissions. In fact, a comparison of the Preferred Alternative and the No Action Alternative for future demand levels shows that the Preferred Alternative results in slightly lower aircraft emissions and reduced noise for the most highly impacted populations in the 75dB and 70dB DNL contours. Refer to Section 3.7 of the Final EIS for more information. Historically, growth in Logan Airport demand has been driven principally by local and national economic conditions, demographics, competition and pricing within the airline industry, and the distribution of airline services between Logan Airport and the surrounding regional airports. These factors will continue to influence the demand for Logan Airport services in the future. The broad range of forecasts considered in the Airside Project's operational and environmental analyses would capture any potential variation in future passenger and aircraft activity at Logan Airport.
18.120	Forecasts		At the end of this section, Massport states that the broad range of forecasts encompasses the impacts that "would be associated with any growth scenario." Based on the previous comments on regional jets and general aviation operations, Massport has not developed forecasts that "bracket" the likely development for Logan.	Refer to responses to Comments 18.109 and 18.115.

Community Advisory Committee Anastasia S. Lyman

Code	Topic 1	Topic 2	Comment	Response
18.121	PRAS	Goals	PRAS goals can only be accomplished if demand management techniques and fleet selections reduce aircraft operations to levels consistent with overall, not peak, airfield capacity, so that controllers can accept a runway allocation system as the primary controlling factor in their decisions. Were that the case, the intensive and difficult process of revisiting and obtaining consensus on revisions to the goals to reflect current and future conditions would be worthwhile. It would be appropriate to incorporate into the Supplemental DEIS/FEIR a commitment to that action and a proposal for a formal environmental process with Federal and State review to attain that goal.	The PRAS goals were established after community input in the 1980s. The objective of PRAS was to distribute noise equitably, based on demographic considerations. As demonstrated in the Supplemental DEIS/FEIR, there have been no significant demographic changes since the PRAS goals were set. Moreover, the Draft EIS/EIR and Supplemental DEIS/FEIR also demonstrate that Runway 14/32 enables controllers to achieve a far more equitable balance of noise impacts among communities surrounding Logan Airport than occurs today and would occur in the future if no action is taken. FAA and Massport further believe that rather than implementing policies to reduce demand, achievement of PRAS runway goals can be more successful by providing greater flexibility to the air traffic control tower during northwest wind conditions. The Massport Board has resolved in the Airside Project Section 61 Findings set forth in Appendix B to begin working with the CAC to update the PRAS program. The current PRAS system is expected to remain in place until superseded. Refer to also to Sections 4.2.1 and 4.2.2 of this Final EIS.
18.122	PRAS	Goals	The short-term goals of the current system, minimizing dwell and persistence of overflights, are probably the most important goals of the current PRAS. The specific numerical goals of the current system appear excessive. Seven hours of overflights in a 19-hour period (37% of the time, the current "dwell" objective) undoubtedly was developed in part to reflect the realities of air traffic control under the then-extant circumstances. In practice, the seven hours are often continuous, run well beyond seven hours, and continue into the next day and beyond. This would create a difficult circumstance for most people. The current "persistence" objective, not more than 23 hours of operation over a given area during a 3-day period, allows the current "dwell" objective to be overridden (3 days x 7 hours/day = 21 hours, not 23). It would seem that "persistence" should be a more stringent objective than "dwell". Achieving consensus on revisions to these numbers is perhaps the most feasible aspect of revisiting PRAS.	The definitions of dwell and persistence for PRAS were established at the same time as the original annual goals. There have been no substantial demographic changes since the 1980's when the goals were first established. Growth in airfield traffic over the years has reduced the controllers flexibility for runway selection during very high demand periods, and thus their ability to offer short-term relief. The addition of Runway 14/32 would be the single most important mechanism to provide Air Traffic Control with greater flexibility to achieve more equitable geographic distribution of aircraft operations, as well as to provide short-term relief from dwell and persistence. Nevertheless, issues of dwell and persistence could be examined with CAC as part of Massport's Section 61 Findings mitigation commitments to update the PRAS. Refer to Chapter 4 of this Final EIS for more information.
18.123	PRAS	Goals	It does not appear that GIS data used in preparing Fig. 4.3-2 was updated from 1985, and thus may not present a realistic picture of changes in land use patterns and population distributions.	The information used in the mapping process is derived from several sources. The base map showing land use is based on land use information developed by McConnell in 1985 and represents the most recent land use information that is available on a state-wide basis. The demographic information is the most recent information that was available at the time of filing (1990 Census), updated population data has been provided in Section 3.8 of this Final EIS.
18.124	PRAS	Goals	The data in Table 4.3-2 should (a) be disaggregated by census tract, (b) be updated by the 2000 census (as available) and (c) shown on a figure. No discussions of PRAS goals have been part of the public participation process associated with the Airside Improvement Project.	The FAA recognizes PRAS as an integral part of noise abatement at Logan. Table 4.3-2 of the Supplemental DEIS/FEIR merely defines the communities in the eight noise areas that were designated by the PRAS Advisory Committee to receive short-term dwell and resistance relief. The table was not intended to include census information; however, updated 2000 census information is available in Section 3.8 of this Final EIS. The PRAS short- and long-term goals were originally established by community representatives, Massport, and the FAA in the early 1980s to maximize overwater operations and to provide equitable sharing of the

Code	Topic 1	Topic 2	Comment	Response
				remaining noise. There have been no significant demographic changes since the goals were established to warrant their revision. PRAS has been the subject of several meetings with the CAC, the CAC consultants and the public. Since, during the course of the Airside Project, the CAC has voiced its objection to the long-standing PRAS goals, Massport has resolved in the Airside Project Section 61 Findings to begin working with the CAC to update the PRAS program, with the understanding that the current PRAS system will remain in place until superseded.
18.125	PRAS	Utilization	Use of "PRAS" objectives as a measure of mitigation of impacts should be removed from the documents. The CAC has formally rejected PRAS as defined as a reasonable system and requested it neither be referred to nor used as a basis for comparing impacts of alternatives. Attainment or approach to attainment of PRAS goals is not feasible under existing operational demand and the feasibility will deteriorate further with increasing demand.	The PRAS objectives were originally established by the concerned communities around Logan Airport, Massport and the FAA in the early 1980s to maximize overwater operations and to provide equitable sharing of the remaining noise. There have been no significant demographic changes since the goals were established to warrant revision of them. PRAS has been a standard feature in routine airport operations for many years and Massport is not proposing any changes at this time. Without the addition of Runway 14/32, attainment of the PRAS goals will undoubtedly deteriorate as traffic grows. However, with the new runway, controllers will have the requisite flexibility to improve performance relative to the annual goals and to provide short-term relief from over flights. Since, during the course of the Airside Project, the CAC has voiced its objection to the long-standing PRAS goals, Massport has resolved in the Airside Project Section 61 Findings to begin working with the CAC to update the PRAS program. The FAA and Massport will consult with the CAC to develop the scope for a noise study that will assess the potential for enhancing existing or developing new noise abatement procedures for Logan. This study will provide the context for reviewing and reassessing PRAS, with the understanding that the current PRAS system will remain in place until superseded.
18.126	PRAS	Goals	To what extent is achievement of PRAS goals assumed in the FLAPS model predictions?	The FLAPS model is used to calculate the hourly capacity of each possible combination of active runways and weather conditions. It predicts the number of operations that a set of runways can handle for a specified mix of aircraft types. It does not use any assumptions about PRAS or goal achievement. The impacts of PRAS are considered in the DELAYSIM model.
18.127	PRAS	Reports	Massport should consider making the PRAS reports available on the Internet for public inspection	In its Section 61 Findings, Massport has committed to expanded distribution of the PRAS reports. The Massport Quarterly Noise Reports will be expanded to include a number of new reports, and the distribution list will be expanded to include interested parties, including the CAC. In addition, the annual PRAS reports will be included in the ESPR. Over the longer term, Massport will work with FAA to design additional reports that could help enhance the attainment of PRAS and improve dissemination and distribution of the reports.
18.128	Delay	Modeling	We understand that FLAPS and the Airport Machine were developed specifically for Massport. To infer the models have been used frequently around the world is inaccurate and misleading.	The CAC statement is inaccurate. While FLAPS was designed at MIT for use at Logan Airport, it has since been adapted and used at other airports including, St. Louis, New York LaGuardia, Sydney, and Amsterdam. The Airport Machine model is also used by airports throughout the world. While the Airport Machine model was not specifically designed for Logan Airport, it has been calibrated for use at Logan Airport.
18.129	Delay	Modeling	How does the DELAYSIM model adjust for the new FAA management system of holding aircraft on the ground at departure point until airspace clearance at their final destination has been awarded?	As with all single-airport simulation models, DELAYSIM determines the delay experienced by a flight due to constraints at the airport in question. Thus, if an aircraft is delayed due to a low arrival acceptance rate at Logan, that delay is counted in the model. Whether this delay would in practice be experienced as a ground hold at the departure airport or in the air enroute to Logan is not important. Differences in delays due to inefficiencies in the FAA's ground hold program itself are not considered. The DELAYSIM model assumes the FAA would release the ground hold so that the aircraft would arrive at Logan as soon as the airport was able to handle the arrival. In

Code	Topic 1	Topic 2	Comment	Response
				practice, the delay due to the ground hold may be longer, as the FAA cannot exactly predict the behavior of the entire air transportation and weather system.
18.130	Peak Period Pricing	Exemptions	Peak Period Pricing as initially developed by Massport is a blunt economic instrument whose principal near-term impact is on service to the Cape and Islands and on their principal carrier Cape Air. The original program concept (DEIS/DEIR) was projected to be moderately effective in reducing overall delay, with 4-6% of flight cancellations during peak periods under "Low Fleet" scenarios; 23% of flight cancellations projected under the 37.5 M High Fleet scenario (plus some shifting of operations out of the peak periods, under both scenarios). However, great pressure developed to minimize the impact of the proposed program on the Cape and Islands and on Cape Air. The result was a proposal from Massport for an "exemption" program that missed its target. 18 airports, including Augusta, Bangor, Manchester, New Haven and Portland, were to be allowed at least 4 Logan operations per day without surcharge during the peak period. Delay reduction benefits of the program would be minimized under the Low Fleet scenarios and greatly reduced under the 37.5M High Fleet scenario. Since the Cape Air fleet of Cessna 402s can, and do use existing Runway 15L-33R, the exemption should only include those air carriers, like Cape Air, that can use Runway 15L-33R.	An exemption program designed to protect services to small communities most reliant on Boston for access to the national air transport system is described in Section 4.5.3 of the Supplemental DEIS/FEIR. The section provides an illustrative exemption program and its impact on the delay reduction potential of PPP. The analysis showed that the effectiveness of Peak Period Pricing in reducing delays is generally maintained, particularly under the 37.5M High Fleet scenario. Section 4.5.3 also explains that future consideration will be given to operational factors, such as use of the 2,557 foot Runway 15L/33R, that may justify exemptions without jeopardizing the delay reduction benefits of Peak Period Pricing.
18.131	Peak Period Pricing	Implementation	The peak period demand management program must be reanalyzed and redesigned. The "average VFR capacity" used in the analysis must be reduced. The impact of increased use of RJ's must be incorporated. The "flat price surcharge" concept must be reconsidered. Then the resulting program recommendation must be fully developed including the adoption and approval of all necessary regulations, policies and other procedural elements, to be ready for immediate implementation. The approach proposed in the Supplemental DEIS/FEIR, of first establishing that the time of need has arrived, then attempting to negotiate a solution with air carriers, and only later beginning to address program design and regulatory measures and commence the approval process, should be rejected.	The Airside Project Draft EIS/EIR and the Supplemental DEIS/FEIR respond to federal and state scoping directives and applicable FAA environmental orders and other NEPA and MEPA requirements, and provide appropriate analytical content for assessing alternatives. The application of a fixed peak period surcharge corresponds to the Citizens Advisory Committee's recommendation that an appropriate demand management program provide mechanisms to encourage the use of larger aircraft at higher load factors. Flights carrying greater numbers of passengers will minimize the cost per passenger impact of the surcharge. In its Section 61 Findings pursuant to the Massachusetts Environmental Policy Act, Massport committed to initiating the rule-making process to implement an enforceable peak period pricing program, or an alternative demand management program with comparable effectiveness, for Logan Airport. The objective of this program will be to avoid or reduce delays associated with overscheduling of Logan Airport's available capacity in good weather conditions. The goal is to have a demand management program in place before overscheduling conditions occur at Logan Airport. The FAA acknowledges that Logan Airport is one of the nation's most delayed airports and that Massport has committed to and will propose to implement a demand management program to reduce overscheduling delays. The FAA expects that any such program that is proposed for

Code	Topic 1	Topic 2	Comment	Response
				implementation will be consistent with applicable Federal law. The FAA is currently working with the U.S. DOT to establish national guidelines for demand management programs at U.S. airports. As part of this national effort, Logan has been selected as one of three airports to serve as a case study for U.S. airport demand management strategies.
18.132	Peak Period Pricing	Implementation	There seemed to be consensus among the SDEIS panel members that the approach Massport should take, to show good-faith effort, was to try to get the regulatory issues regarding peak period pricing identified and addressed before airline over scheduling is identified. In that way, Massport could be more responsive to implementing demand management measures since it is agreed that approval of peak period pricing by FAA may require time and various developmental iterations. It is surprising that Massport did not alter its recommendations based on the apparent consensus of the SDEIS Panel that this seems like a more reasonable and dynamic approach, and would show that Massport is indeed committed to demand management policies.	In its Section 61 Findings pursuant to the Massachusetts Environmental Policy Act, Massport committed to initiating the rule-making process to implement an enforceable peak period pricing program, or an alternative demand management program with comparable effectiveness, for Logan Airport. The objective of this program will be to avoid or reduce delays associated with overscheduling of Logan Airport's available capacity in good weather conditions. The goal is to have a demand management program in place before overscheduling conditions occur at Logan Airport. The FAA acknowledges that Logan Airport is one of the nation's most delayed airports and that Massport has committed to and will propose to implement a demand management program to reduce overscheduling delays. The FAA expects that any such program that is proposed for implementation will be consistent with applicable Federal law. The FAA is currently working with the U.S. DOT to establish national guidelines for demand management programs at U.S. airports. As part of this national effort, Logan has been selected as one of three airports to serve as a case study for U.S. airport demand management strategies.
18.133	Peak Period Pricing	Threshold	The Peak Period Pricing analysis presented in the DEIS/DEIR uses 110 ops/hour, "somewhat below Logan's VFR (120) and average (115) available 3-runway capacities," in order to provide a conservative threshold of the impacts of peak period pricing. However, 110 ops/hour is higher than the existing FLAPS operational capacity for every runway configuration except the Runway 4L/R & 9 combination under VAPS conditions. If Massport is trying to meet PRAS goals, the higher capacity runway configuration should be used less than the 80% of the time it is available. The "average VFR capacity" is about 110 ops/hour, 8% lower than 120 ops/hour stated in the Supplemental DEIS/FEIR. This rate of operations should be the target of any demand management system aimed at reducing airside delay at Logan. Because economic incentives or constraints inevitably function at a level less than ideal, the "trigger level" for initiation of Peak Period Pricing or alternative peak demand management approach should be set at 90% or less of the desired objective-in this case, at 100 ops/hour or less.	Logan is an important part of the national air transportation system, and the FAA is committed to enhancing safety and increasing the efficiency of that system. It is the FAA's goal to satisfy the demand for air transportation by increasing the efficiency of existing capacity and expanding capacity where needed, rather than by artificially constraining demand. Lowering the peaking threshold to a level at or below 100 operations per hour was raised during the SDEIS Panel Process and was considered by the FAA, but was determined to be inconsistent with FAA policies. As explained in the Responses to Comment 18.22, the full modeled capacity of the airfield under VFR conditions is approximately 120 hourly operations under the 29M Low No Action scenario. This is higher than the "trigger" level of 110 operations per hour, and therefore accounts for the inefficiencies described in the comment.

Community Advisory Committee Anastasia S. Lyman

Code	Topic 1	Topic 2	Comment	Response
18.134	Alternatives	Sensitivity	During the panel process, there was a call for additional analysis and sensitivity analysis of the peak period pricing management tool as well as for exploration of additional demand management scenarios. Neither FAA nor Massport responded to this request. When MIT Professor Fred Salvucci proposed a sensitivity analysis and MIT Professor Odoni offered his unbiased assistance to work with Massport to develop a sensitivity analysis of the proposed demand management technique and explore other techniques, his offer was met with unyielding resistance by Massport. The Supplemental DEIS/FEIR did not perform any additional modeling to document if choosing a lower threshold for the peak period would provide additional delay reduction. Massport refusal to explore no-build options in additional detail does not present a rounded analysis of the options to reduce delay.	The FAA is committed to enhancing safety and increasing the efficiency of air travel by modernizing the air traffic control system and expanding the capacity of the national air transportation system. Logan is a critical part of the national system, and the FAA's goal is to satisfy the demand for air transportation at Logan as safely and efficiently as possible without artificially constraining demand. Lowering the peaking threshold to a level at or below 100 operations per hour was raised during the SDEIS Panel Process and was considered by the FAA, but was determined to be inconsistent with FAA policies. The Draft EIS/EIR and the Supplemental DEIS/FEIR provide a sensitivity analysis using a variety of activity levels with fleets of varying aircraft size. The Airside analysis has examined a range of five different historic and future passenger levels, as well nine different baseline levels of operations. By examining various improvement scenarios, both with and without demand management, a total of 15 different demand level scenarios were analyzed and presented, with multiple improvement packages analyzed at each demand level.
18.135	Regional	Regional Airports	The analysis in Section 4.5.2 presented does not support the conclusion that "it is not expected that a substantial portion of Logan's existing regional carrier services could be economically supported at alternate regional airports."	Regional carrier flights at Boston generally serve small communities that rely on regional carrier services for (1) connections to flights at Logan Airport that are not available at regional airports and (2) access to the greater Boston area. An examination of Logan Airport's 10 largest turboprop markets for the 12 months ending June 30, 2000 (latest available data) indicates that 51 percent of the passengers on these flights are connecting passengers. Most of the connecting passengers for these markets are from small New England and upstate New York communities that must transfer to another flight at Logan Airport to reach their final destination. For example, 71 percent of the passengers on Logan-bound regional carrier flights from Bangor connect onto other flights at Boston. Other markets with a high share of connecting passengers include: Portland (78 percent); New York JFK (65 percent); and Burlington (63 percent). The JFK market is different from the others in that the connecting passengers on these flights primarily originate from Logan and transfer to international flights departing from JFK. In FY 2000, several carriers - American Eagle, TWA Express, and United Express - were operating turboprop flights between Logan Airport and JFK in order to provide passenger feed to international flights at JFK. Several of Logan Airport's top turboprop markets have a high percentage of local passengers: Rochester (85 percent); Syracuse (72 percent); and Westchester County (84 percent). These are relatively small New York state-New England O&D passenger markets that airlines choose to serve from Logan Airport, because Logan Airport is closest to the largest concentration of demand - the City of Boston. It is unlikely that any of these regional carrier flights could be transferred to regional airports since the regional airports do not offer the range of connecting markets that are offered from Logan Airport and they do not offer the same convenient access to Boston, New England's most populous city and its largest business and cultural center.
18.136	Regional	Regional Airports	The analysis in Section 4.5.2 should include discussion with the regional carriers regarding the "shifting of activities to other airports."	Refer to response to Comment 18.135.

Community Advisory Committee Anastasia S. Lyman

Code	Topic 1	Topic 2	Comment	Response
18.137	Peak Period Pricing	Exemptions	How did the peak period pricing exemption treat operations that could be provided on Runway 15L/33R?	The Supplemental DEIS did not analyze this as a potential exemption, but did identify it as a potential candidate after input from Cape Air. Section 4.5.3 states that these operational exemptions will be considered, and incorporated into any future exemption program if appropriate.
18.138	Peak Period Pricing	Implementation	Instead of developing a monitoring system with respect to establishing the need for developing and subsequently implementing a demand management scheme, Massport should establish a demand management system and the triggers used for implementation.	Refer to response to Comment 18.132.
18.139	Peak Period Pricing	Implementation	Phase 2 indicates that peak period pricing would be invoked under high fleet conditions but this seems limiting; why not invoke it when a certain trigger is reached?	Refer to response to Comment 18.132.
18.140	Fleet Mix/Forecast	1993 Base Year	1993 is no longer an appropriate historic year on which to base operational and environmental analysis of the effect of the proposed airside improvement projects because the industry has changed. The airlines are not going to withdraw their existing and future regional jets from the Logan market; thus, the foundation of 1993 as the base year for the EIS/EIR is flawed.	The appropriate comparison for evaluating the Preferred Alternative is a comparison of the Preferred Alternative to the No Action Alternative in each future year scenario. The operational and environmental analysis of the proposed airside improvements was not based on 1993 historic conditions. The analysis for 1993 was included in the Airside Project Draft EIS/EIR to provide historical perspective to the delay problem at Logan Airport and for use in model calibration. The Supplemental DEIS/FEIR included delay and environmental analyses for 1998 to reflect more recent conditions at Logan Airport. As cited in the comment, the airline industry, as well as conditions at Logan Airport, change from year to year. For this same reason it would be incorrect to assess the effectiveness of the Preferred Alternative under future year conditions by comparing it to a historic base year. Base year for operations and environmental analysis is not the historic year, but is the No Action Alternative. The historic year was updated in the Supplemental DEIS from 1993 to 1998.
18.141	Runway 14/32	Runway Use	Because of the integration of regional jets in the fleet, only the DRJ regional jets are likely to use the new runway under all conditions, and these aircraft types are a minority in the RJ fleet. The remaining subset of aircraft that could use the runway is diminishing since RJs are replacing many turbojets that were in the Logan market. Also, Cape Air, which is using 9-seat Cessna aircraft, has indicated they can and do use 2,557 Runway 15L-33R for operations. Thus, the subset of aircraft that need a runway 2,560 ft.- 5,000 ft. is very limited and the delay reduction provided in the 1993 analysis of the airside improvement projects is no longer valid.	The statement that DRJs are a minority in the RJ fleet is incorrect because it applies to the projected RJ fleet for all U.S. regional carriers and fails to consider which carriers are likely to have a significant presence at Logan. To state that only DRJs can land on Runway 32 in all conditions is also incorrect because it ignores the information provided by the FAA's consultant which indicated that Embraers could land on the runway most of the time (i.e., in dry conditions which occur 88 percent of the time). Using the Logan specific fleet and the use assumptions provided by the FAA (DRJs can land in all conditions and Embraers can land under dry conditions), approximately 71 percent of Logan's future regional jet arrivals are able to land on Runway 32. See also response to comments 18.67 and 18.99.
18.142	Runway 14/32	Runway Use	CAC analysis of information presented in Chapter 4, pages 4-16-4-18 (not repeated here). Based on this analysis, only 26% of the proposed 37.5M High RJ Fleet (584,612) is capable to be able to use proposed Runway 14-32, and then the actual use will depend on the airfield configuration selected based on wind and weather.	The FAA performed an independent review of the regional jet issue and provided appropriate assumptions for the airfield simulation and delay analysis. These assumptions are described in Chapter 4 and Appendix C of the Supplemental DEIS/FEIR. Using the parameters provided by the FAA, the analysis showed that Runway 14/32 would produce significant delay reduction benefits under a future fleet scenario characterized by high levels of regional jet aircraft and a substantial reduction in non-jet activity. Using the Logan specific fleet and the use assumptions provided by the FAA (CRJs cannot land on the runway, DRJs can land in all conditions and Embraers can land under dry conditions), 71 percent of Logan's future regional jet arrivals are able to land on Runway 32. In addition, a sensitivity analysis demonstrated that the majority of the delay reduction benefit would be

Code	Topic 1	Topic 2	Comment	Response
				retained, even at levels of regional jet use significantly below those identified by the FAA's independent review. Refer to Appendix C for Review of Forecast Regional Jet Use, Proposed Runway 32 at Logan International Airport, Prepared for the FAA; Section 4.7.5 of the Supplemental DEIS/FEIR; and to this Final EIS, Chapter 3, Section 3.3.5.1. The CAC calculation should have focused on arrivals only, as that is the relevant factor for the capacity and delay impacts. As described in Chapter 3, Section 3.3.5.1 of this Final EIS, approximately 41 percent of the 37.5M High RJ Fleet is able to land on Runway 32 (versus the 26 percent assumed to land or takeoff calculated by the CAC with similar assumptions). Since arrivals can be split nearly evenly between Runways 32 and 33L, the capacity and delay benefits are significant. Even under the pessimistic low utilization assumptions of the sensitivity analysis, 26 percent of the fleet is able to land on Runway 32, and runway delays are reduced by over 20 percent.
18.143	RJs	Runway Use	...if the Embraer 135s & 145s do not choose to use the runway...and there are more Embraer and Canadian Regional Jets than Dornier 328 Jets (as the future fleet purchases based on Airclaim data indicate), the total potential operations is more realistically 36% lower than projected, thus allowing only 17% of the proposed 37.5M High RJ Fleet (584,612) capable to be able to use proposed Runway 14-32…	See response to Comment 18.142. Embraer 135s and 145s are certified to land safely on a 5,000 foot runway, and the assumption that the Embraer 135 and 145 are able to land on Runway 32 was developed through an independent review conducted by the FAA. This assumption is further supported by a letter from American Eagle, the leading Embraer operator at Logan, indicating the airline's intention to land on Runway 32. Regarding the Airclaims data analysis, as explained in the Response to Comment 17.99, the CAC's analysis of recent RJ orders by U.S. airlines fails to consider which carriers are likely to have a significant presence at Logan Airport. By including carriers with industry leading fleets of CRJ aircraft that have little or no presence at Logan Airport, the CAC analysis substantially exaggerates the likely future role of the Canadair CRJ at Logan Airport. The sensitivity analysis presented in Section 4.7.5 of the Supplemental DEIS/FEIR and expanded upon in Section 3.3 of this Final EIS indicates that Runway 14/32 provides substantial delay reduction benefits even under very pessimistic runway utilization assumptions.
18.144	Runway 14/32	Runway Use	Finally, if Massport institutes a policy towards directing general aviation aircraft (specifically business jets) away from Logan and toward other regional airports (as it should be required to as part of demand management policies), only 14% of the proposed fleet could even use the proposed runway.	See responses to Comments 18.142 and 18.143, which indicate that a higher percentage of the fleet is capable of landing on Runway 32, regardless of the level of GA diversion. The FAA and Massport have already taken steps to encourage the diversion of general aviation operations to Hanscom Field. The FAA has designated Hanscom Field as a general aviation reliever airport to Logan in the National Plan of Integrated Airport Systems (NPIAS). As a measure to encourage more GA use of Hanscom, Massport does not assess landing fees at Hanscom Field . In 2000, Hanscom accommodated over 200,000 general aviation operations compared to 35,000 at Logan Airport.
18.145	Alternatives	All Alternatives	The comparative analyses presented in a number of subsections of this section (Tables 4.6-1, -3, -4, and -7, and Figs. 4.6-1, -3, -5, -6, and -7) should include the analysis of delay with Alternatives 1, 2 and 3 as well as the "preferred alternative" 1 A, in order to present a better comparison of the effects of the options. Table 4.6-1 should compare modeled effects on annual delay hours for the 3 options under the 37.5 million passenger low fleet scenario in addition.	Refer to response to Comment 18.16.

Community Advisory Committee Anastasia S. Lyman

Code	Topic 1	Topic 2	Comment	Response
18.146	Delay	Modeling	This Section continues the practice, almost universal in the Report, of comparing DelaySim modeled delay hours with FAA measured hours when they are not estimated and reported on a comparable basis, despite the effort in Table 1.4.5 to present a comparative analysis. The Report should be clear in every instance when reporting or calculation of delay is based on application of the DelaySim model. (the "airfield operations analysis").	In the specific section referenced by this comment, Section 4.6.1, there is no mention of delay hours reported by the FAA. The entire discussion relates to the DELAYSIM modeled delay hours, as the titles to the Chapter and the Section indicate. The discussion of reported FAA and DOT delay statistics in Section 1.4 was meant to describe the various published delay statistics to the reader of the document. In particular, Section 1.4.1.1, Comparison of Simulated Delays and Measured Delays, and Table 1.4.5, were intended to clarify the differences between reported and simulated delay statistics.
18.147	Delay	Modeling	It is not clear whether the first bar graph for 1998 in Fig. 4.6- 1 represents modeled or measured delay by wind direction, although in context it is assumed to be a set of modeled estimates. It is also not clear whether allowable crosswind component was considered in developing the estimates. If not, the estimated delays could be substantially reduced.	Both the first and second bars in Figure 4.6-1 represent modeled delays. Please refer to page 4-55,last paragraph, second sentence which states "The version of DELAYSIM used for the 1998 delay analysis included an added feature for tabulating delays by wind direction." The DELAYSIM model does consider the allowable crosswind component when simulating delays.
18.148	Fleet Mix/Forecast	2000 Base Year	Why was 2000 information not provided in the SDEIS/FEIS?	Official CY 2000 Massport statistics, which are reported by each individual carrier, were not available until the end of January 2001. The analysis of delays by wind condition, with and without Runway 14/32, using 2000 data would not have produced a different conclusion than the 1998 analysis.
18.149	Delay	Taxiway	Why wasn't detailed taxiway simulation conducted for 1998? Or 2000?	The various taxiway improvements will increase airfield efficiency and decrease taxiing delays by improving the existing taxiway system. The Draft EIS clearly demonstrated that the taxiway improvements produced a consistent reduction in taxiway delay hours for the five future fleets analyzed. As shown in Table 4.5-6 of the Draft EIS, the proposed taxiway improvements reduced taxiway delays by 15,000 to 22,000 annual hours. Based on the consistency of these results, it is reasonable to conclude that the modeling exercise would produce similar results for 1998 conditions and that the 1998 taxiway delay reduction could be reasonably estimated from prior model runs. In addition, the taxiway improvements would also provide important safety benefits that cannot be quantified by the taxiway modeling. Refer to this Final EIS, Section 3.6.1. Note that no runway, taxiway, or environmental modeling was performed for the year 2000.
18.150	Delay	Modeling	Provide a summary of the percentage of time each runway configuration was used in 1998. Provide a summary of the percentage of time the winds were appropriate for each runway configuration in 1998.	Actual statistics on configuration availability are not recorded for each runway configuration, but configuration availability is determined by wind and weather conditions and is considered in all Airside modeling. On an hourly basis, the crosswind and tailwind on each runway are compared to the Logan limits. Ceiling, visibility, and other operating restrictions (such as noise rules) are also evaluated. Configuration availability can be calculated directly from the weather data, and Section 6.2.1.3 and Table 6.2-4 of the Supplemental DEIS/FEIR present information on runway use, providing an indication of configuration utilization.
18.151	Delay	Cost of Delay	Exception is taken to the estimating of delay costs. While the estimated unit cost to airlines may be supportable by reasonable data, it is doubted that the same can be said for the value of time for airline passengers. Further, both have opted to use the system as it exists; the airlines have created the delay situation; and no one calculates the costs to the communities and the public of the impacts on them of the operations at Logan which they did not opt to accept.	The cost of delay analysis presented in the Airside Project Draft EIS/EIR and the Supplemental DEIS/FEIR is based on a methodology recommended by the FAA. The cost of delay to a passenger ($27 per hour) is a weighted average cost for business and leisure passengers developed by the FAA. Refer to FAA APO Bulletin APO-97-1.

Code	Topic 1	Topic 2	Comment	Response
18.152	Delay	Modeling	How much of the total delay simulated is of operations where the delay is less than 15 minutes?	Section 4.6.2 discusses the 29M Low and 37.5M High fleets. Under the 29M Low No Action Scenario, approximately 12 percent of the total delay hours were associated with operations delayed less than 15 minutes. Under the 37.5M High No Action Scenario, approximately 7 percent of the total delay hours were associated with operations delayed less than 15 minutes. The great majority of the modeled delays are associated with operations delayed greater than 15 minutes. Any delay reduction results in operational and environmental benefits. Simulation modeling is the best methodology to estimate delay reduction. Chapter 4.6 of the Supplemental DEIS/FEIR contains a discussion on the estimation and modeling of flight delays used in the Airside Project. Chapter 1 and Appendix C include a description of measures used by FAA and U.S. DOT to calculate delay, the limitations of those measures, an explanation of computer models for estimating flight delays, and historical delay data at Logan Airport and other major United States airports.
18.153	Delay	Modeling	How much of the delay is due to cancelled flights?	While the modeling effort does not explicitly track cancellations, as a proxy, it can be assumed that flights delayed greater than 3 hours would be cancelled. Given that, cancelled flights (those delayed greater than 3 hours) account for 1.9 percent of total operations in the 29M Low No Action scenario and 4.9 percent of total operations under the 37.5M High No Action scenario. With the Preferred Alternative, cancelled operations are reduced to 1.4 percent and 4.0 percent under the 29M Low and 37.5M High scenarios, respectively. Because the FAA and U.S. DOT delay statistics only record historical delays, the FAA requires delay modeling when evaluating the future delay reduction benefits of airport capital improvements. The methodology used for the Airside Project provides a consistent and systematic estimate of flight delays caused by constraints at Logan Airport. The analysis based on this methodology indicates that: (1) flight delays at Logan Airport remain a significant problem and will become worse over time if no action is taken and (2) the Preferred Alternative can provide significant reductions in current and future delay levels.
18.154	Delay	Modeling	Based on Logan's delay simulation under the No Action 37.5 million passengers High Fleet Scenario, flights at Logan would experience an average of 36 minutes per flight. However, FAA and airlines don't count delays until over 15 minutes. Therefore, by FAA practice, excessive delay on average would be about 20 minutes per flight under the worst-case scenario.	As explained in Response to Comment 18.152, flights delayed less than 15 minutes represent only 7 percent of total delays under the 37.5M High scenario. Furthermore, it is incorrect to compare the modeled results to the criteria of the various FAA and DOT reporting systems as these statistics are accumulated for different purposes using different methodologies (see Appendix C of the Supplemental DEIS/FEIR). While the FAA considers aircraft that are delayed less than 15 minutes to be "on-time", it does not consider a flight delayed 36 minutes to be delayed by only 21 minutes. The FAA CODAS and DOT ATCR systems both keep track of all minutes of delay for all flights in the respective systems. The FAA OPSNET database records the type and duration of delay for delayed flights only (those delayed greater than 15 minutes).
18.155	Alternatives	All Alternatives	The Report should expand the presentations in Figure 4.6-2 and Table 4.6-3 to show the comparison of delays or delay reductions projected to be experienced or achieved under Alternative 2, and for all alternatives considered under the 29MP High and 37MP Low scenarios, for both IFR and VFR conditions.	Refer to response to comment 18.16.
18.156	RJs	Delays	Figure 4.6-3 needs to be revised for 29M Low and 37.5M High to reflect RJ fleet	Forecast delay hours by weather category for the 37.5M High RJ fleet and all project alternatives are depicted in Figure 4.7-4 of the Supplemental DEIS/FEIR.

Community Advisory Committee Anastasia S. Lyman

Code	Topic 1	Topic 2	Comment	Response
18.157	RJs	Runway Use	Since it appears a majority of regional jets are unlikely to use Runway 14/32 as modeled, the flexibility that controllers would have to shift runway use patterns may also be limited to the subset of operations that can land between 2,560 and 5,000 feet. This flexibility needs to be reevaluated.	The FAA performed an independent review of the regional jet issue and provided appropriate assumptions for the airfield simulation and delay analysis. These assumptions are described in Chapter 4 and Appendix C of the Supplemental DEIS. Using the parameters provided by the FAA, the analysis showed that Runway 14/32 would produce significant delay reduction benefits under a future fleet scenario characterized by high levels of regional jet aircraft and a substantial reduction in non-jet activity. Using the Logan specific fleet and the use assumptions provided by the FAA (CRJs cannot land on the runway, DRJs can land in all conditions and Embraers can land under dry conditions), 71 percent of Logan's future regional jet arrivals are able to land on Runway 32. In addition, a sensitivity analysis demonstrated that the majority of the delay reduction benefit would be retained, even at levels of regional jet use significantly below those identified by the FAA's independent review. Refer to Appendix C for Review of Forecast Regional Jet Use, Proposed Runway 32 at Logan International Airport, Prepared for the FAA and Section 4.7.5 of the Supplemental DEIS. Refer to this Final EIS, Chapter 3, Section 3.4.
18.158	RJs	Runway Use	...conversations with air traffic control tower personnel conducting air traffic operations at Philadelphia International Airport (which has both a 5,500 ft. and 5,000 ft. runway), Ronald Reagan National Airport (which has a 4,911 ft. runway), and Norfolk International Airport (which has a 4,876 ft. runway), pilots of regional jets & craft prefer to use longer runways rather than these 5,000 ft +/- runways.	The situation at Philadelphia is very different from the proposed Runway 14/32 at Logan. The 5,000 foot unidirectional Runway 8/26 at PHL was designed to provide additional capacity under IFR conditions, but actually interferes with the most efficient use of the longer jet runways due to a wake vortex dependency. The runway provides little benefit under good weather (VFR) conditions, and a complex taxi routing and a significant down slope further decrease the runway's utility. It should also be noted that the lack of runway use is not an RJ issue. Philadelphia has significantly more turboprop operations than regional jet operations, and even these turboprops are not using Runway 8/26. All of these conditions are specific to Philadelphia and have no bearing on the utility of the proposed Runway 14/32 at Logan. The runways cited at Reagan National and Norfolk are shorter than 5,000 feet and on that basis are not comparable to the proposed Runway 14/32 at Logan. The FAA performed an independent analysis of the regional jet issue and provided appropriate assumptions for the airfield simulation and delay analysis. It should be noted that Runway 14/32 will primarily accommodate arrivals and that required landing distances for arriving aircraft are typically shorter than the distances required for takeoffs. Using the assumptions provided by the FAA and described in Appendix C of the Supplemental DEIS/FEIR, most of the regional jets forecast to use Logan Airport in the future are capable of landing on a 5,000 foot runway. Of the 184,000 regional jets in the 37.5M High RJ fleet, 43,000 are Dornier 328Jets, 36,000 are CRJs, and 100,000 are Embraer 135/145s. The remaining regional jets are larger 70-seat models that were assumed to be incapable of landing on Runway 32. Assuming that the 328 Jets could land under any conditions and that the Embraers could land under dry conditions (which occur 88 percent of the time), approximately 131,000 regional jets, or 71 percent of the future regional jet, are able to land on Runway 32. This constitutes most of the regional jets forecasts to use Logan Airport in the future. Several of the largest regional carriers that operate regional jets at Logan Airport, including American Eagle and ACJet (a Delta Connection carrier), have provided letters confirming their intentions to use Runway 14/32 when it becomes operational. Refer to Appendix F of this Final EIS for letters from these airlines and others. Also refer to Section 3.3 of this Final EIS for a discussion of the probable use of Runway 14/32 by regional jets.

Community Advisory Committee Anastasia S. Lyman

Code	Topic 1	Topic 2	Comment	Response
18.159	RJs	Runway Use	The more conservative and practical approach for modeling purposes on the likely delay reducing potential of the runway is to assume that neither CRJs nor ERJs use proposed runway 14/32 but all other types of RJs do use the runway. This case has been modeled in Section 4.7.3 and should be considered the nominal case when assessing the operational and environmental conditions of the airside improvement projects.	An independent assessment conducted by the FAA indicated that ERJ's would use Runway 14/32 in dry conditions. This assumption has been confirmed by American Eagle, a large operator of Embraer regional jets at Logan, which has indicated that it will use Runway 14/32 under appropriate conditions when it becomes available. Please refer to Appendix F of this Final EIS for American Eagle's letter and letters from other regional jet operators. The FAA's RJ use assumptions were used to model both the operational and environmental impacts of the 37.5M High RJ fleet. An additional sensitivity analysis using more restricted assumptions indicated that the majority of the delay reduction benefits would be retained even at levels of regional jet use significantly below those identified by the FAA. Refer to Section 4.7.5 of the Supplemental DEIS/FEIR and Section 3.3 of this Final EIS.
18.160	Peak Period Pricing	37.5M High RJ Fleet	Massport states that the peak period pricing program, as envisioned and presented in the DEIS/Supplemental DEIS/FEIR will be ineffective. Since Massport has underestimated the amount of RJs in the 29M, 37.5M and 37.5 High RJ fleets, the entire analysis should be challenged.	The Supplemental DEIS and the Draft EIS/Draft EIR have indicated consistently in the long range if overscheduling becomes a problem, peak period pricing or some type of demand management program would be effective under these scenarios. Section 4.7.1 showed that a $150 flat fee would have little impact on regional jets. However, the potential delay reduction benefits of an effective Peak Period Pricing program under a 37.5M High RJ fleet were described in Sections 4.7.1 and 4.7.2 of the Supplemental EIS. The analysis shows that an effective Peak Period Pricing program would reduce runway-related delays by 18 percent in the 37.5M High RJ Fleet scenario. Peak Period Pricing would be designed to impact the fleet that is in place at the time it is implemented.

Code	Topic 1	Topic 2	Comment	Response
18.161	Peak Period Pricing	37.5M High RJ Fleet	Massport admits that the current Peak Period Pricing program would be ineffectual at spreading demand throughout the day. For a program to be effective, a high charge may be needed which may eliminate non-jets at Logan and violate the revenue neutral policy. This statement radically changes the alternatives that have been considered throughout the DEIS/FEIR and Supplemental DEIS/FEIR process. Effectively, Massport is realizing that peak period pricing with the current regional jet activity is not likely to be effective. Yet, Massport has simply refused to consider other demand management strategies. Massport states that they want to wait upon FAA's rulemaking at LaGuardia before they can develop a peak period pricing scenario that would be effective at Logan. Moreover, Massport states that they want to wait until they can identify the specific fleet characteristics of Logan's over scheduling situation. This is why planning is so important. Massport can estimate the possibility that over scheduling of regional jets will occur (they identify this possibility in the Supplemental DEIS/FEIR); thus an effective demand management solution should be considered at part of this Supplemental DEIS/FEIR for this situation. Massport does not support its comparison of Figure 4.7-3 August Weekday Peaking Patterns - 37.5M High RJ Fleet. Massport documents why the Peak Period Pricing model would not be effective for RJs, then "postulates" some hypothetical reduction. This comparison is not valid. Massport states that Peak Period Pricing as envisioned is ineffective for a high RJ fleet; thus, without revising the program, the effects of Peak Period Pricing on a high regional jet fleet cannot and should not be shown.	See response to Comment 18.160. In its Section 61 Findings pursuant to the Massachusetts Environmental Policy Act, Massport committed to initiating the rule-making process to implement an enforceable peak period pricing program, or an alternative demand management program with comparable effectiveness, for Logan Airport. The objective of this program will be to avoid or reduce delays associated with overscheduling of Logan Airport's available capacity in good weather conditions. The goal is to have a demand management program in place before overscheduling conditions occur at Logan Airport. The FAA acknowledges that Logan Airport is one of the nation's most delayed airports and that Massport has committed to and will propose to implement a demand management program to reduce overscheduling delays. The FAA expects that any such program that is proposed for implementation will be consistent with applicable Federal law. The FAA is currently working with the U.S. DOT to establish national guidelines for demand management programs at U.S. airports. As part of this national effort, Logan has been selected as one of three airports to serve as a case study for U.S. airport demand management strategies.
18.162	Runway 14/32	Runway Use	The sensitivity analysis on the use of Runway 32 for landings by Regional Jets (page 4-84) indicates that if the more pessimistic scenario were realized (only Dornier/Fairchild DRJs using RW 32 for landings), the R/W delay savings from constructing R/W 14/32 would be about the same as Alternative 2. [CAC calculations from Table: Total Hours R/W Delay for 37.5RJ Fleet, not repeated here] The difference is 3% R/W Delay - Is building of the runway, the controversy really worth this low amount of change?	The runway utilization assumptions presented in the Supplemental DEIS/FEIR were developed through an FAA independent analysis. The FAA and Massport believe that these baseline assumptions, used throughout the 37.5M High RJ analysis, represent reasonable and conservative assumptions for planning purposes. Peak Period Pricing and Runway 14/32 are designed to address different causes of delay. Peak Period Pricing would target delays that result from airline overscheduling, while Runway 14/32 is designed to prevent delays that occur during northwest winds. Massport has committed in the Section 61 Findings to the implementation of a demand management program, with a monitoring program that would identify when overscheduling conditions exist. Since the 37.5M High RJ scenario represents an overscheduling situation that would likely trigger any monitoring program, the correct comparison is between Alternatives 1 and 2, not 1A and 2. While Peak Period Pricing alone would have benefits comparable to Runway 14/32 alone (under the

Code	Topic 1	Topic 2	Comment	Response
				extremely pessimistic Low Use Sensitivity Analysis assumptions), the combination of both Peak Period Pricing and Runway 14/32 (Alternative 1) would reduce annual delay hours by an additional 85,000 annual delay hours compared to Peak Period Pricing alone (Alternative 2). This level of delay reduction is clearly worth the effort.
18.163	RJs	Runway Use	Massport states that under strong northwest wind conditions (which occur an average of only 10 days per year), "it is unlikely that many (pilots) would reject the option of a perfectly safe and legal landing on Runway 32, particularly as they gain familiarity with the new runway" It seems that Massport has real concerns whether a 5,000 foot runway will be adequate for the regional jets. The conservative approach to model the impacts would be to assume that only the DRJs use the runway.	A sensitivity analysis assuming that only the DRJs would use Runway 14/32 was performed. If only DRJs used the runway, Runway 14/32 would result in 76,400 annual hours of delay savings. Refer to Section 4.7.5 of the Supplemental DEIS and Section 3.3.5.1 of this Final EIS.
18.164	Runway 14/32	Wind Restriction	Provide the information illustrated in Figures 5, 7, and 8 (pages D-7, D-9, and D-10-11, respectively) for the 25-knot wind restriction. (The figures shown illustrate impacts of a 5-knot wind restriction) For the 5-knot and 25-knot wind restriction cases, provide information on Runway 33 jet departures Similar to Figure 3 (page D-5) for Runway 27 departures.	Based on the FAA Panel recommendations, analysis of a potential northwest wind restriction on the use of Runway 14/32 was presented in the Supplemental DEIS (Appendix D). The analysis tested various wind restrictions, ranging from 5 knots to 25 knots (including 20 knots), and showed the impact of such a restriction on (1) the delay reduction benefit of the runway; (2) the number of jet departures using Runway 27; (3) the ability to achieve PRAS goals ;(4) the use of overwater flight paths; and (5) the use of the north/south runway configurations. The noise impacts of a potential wind restriction were illustrated under a 5 knot restriction because it would retain the majority of delay reduction benefits of the runway while limiting the increase in the percentage use of Runway 27 for jet departures. This noise analysis was shown for illustrative purposes only and was not intended to be a detailed environmental analysis of a northwest wind restriction. Restricting use at 10 knots or greater would reduce the delay reduction benefits while having little additional impact on Runway 27 departures.
18.165	Runway 14/32	Runway Use	Table 4-7-1 identifies the typical turboprop activity at Logan (presumably in 1998) in its analysis of impacts of peak period surcharges on turboprop and RJ markets. It should be noted that Mesa Airlines, operating as USAirways Express using Beech 1900 aircraft has plans to dispose of these turboprops and replace them with CRJs. Mesa already has fixed orders for 28 ERJs. American Eagle, operating turboprops in the Logan market in 1998, has firm orders for 112 new regional jets, of which 87 are ERJs and 25 are CRJs. American Eagle currently has 74 ERJs in its fleet. Thus, of the turboprops identified in this table, only Cape Air's 9-seat Cessna 402's are likely to be able to use proposed Runway 32. This illustration points out the inadequacies of the underlying assumptions and analysis developed in the Supplemental DEIS/FEIR with regard to regional jet activity and estimations of type of regional jets active in the Logan market.	Table 4.7-1 presents the potential impact of a $150 fee on existing Logan turboprop and RJ routes to demonstrate that a $150 surcharge may not represent a meaningful peak period deterrent to an RJ operator. The table does not present any information about future RJ or turboprop activity, nor does it present information about the utilization of Runway 14/32. The underlying assumptions used in the EIS analysis regarding RJ utilization of the proposed unidirectional Runway 14/32 are appropriate. The FAA performed an independent review of the regional jet issue and provided appropriate assumptions for the airfield simulation and delay analysis. It should be noted that Runway 14/32 will primarily accommodate arrivals and that required landing distances for arriving aircraft are typically shorter than the distances required for takeoffs. Using the assumptions provided by the FAA and described in Appendix C of the Supplemental DEIS/FEIR, most of the regional jets forecast to use Logan Airport in the future are capable of landing on a 5,000 foot runway. Of the 184,000 regional jets in the 37.5M High RJ fleet, 43,000 are Dornier 328Jets, 36,000 are CRJs, and 100,000 are Embraer 135/145s. The remaining regional jets are larger 70-seat models that were assumed to be incapable of landing on Runway 32. Assuming that the 328 Jets could land under any conditions and that the Embraers could land under dry conditions (which occur 88 percent of the time), approximately 131,000 regional jets, or 71 percent of the future regional jet, are able to land on Runway 32. This constitutes most of the regional jets forecast to use Logan Airport in the future. Using those same assumptions, approximately 79 percent of Logan Airport's recent regional jet operations (June 2001) could land on Runway 32. Several of the largest regional carriers that operate regional jets at Logan Airport, including American Eagle and ACJet (a Delta

Code	Topic 1	Topic 2	Comment	Response
				Connection carrier), have provided letters confirming their intentions to use Runway 14/32 when it becomes operational. Refer to Appendix F of this Final EIS for letters from these airlines and others.
18.166	Fleet Mix/Forecast	Aircraft Types	According to the OAG for April 2001, Cape Air represents approximately 21,000 ops per year or about 5% of the current total passenger operations. The 37.5M High RJ fleet illustrated in Table 4.2-4 of the long-term forecasts indicates there will be 12% regional non-jets or 65,000 operations of regional non-jets. Cape Air's existing operations (21,000) equals about one-third of this amount (assuming no growth in Cape Air's operations). Other non-jet operations are anticipated to account for the remaining two-thirds of the regional non-jets. Turboprops that currently operate at Logan include Dehaviland-8, Fokker 100, Saab 340, and Beech 1900, but based on future fleet acquisitions by the airlines serving Massport, it is likely these turboprops will be replaced by future RJs (ERJs or CRJs). Massport has not demonstrated their forecasting methodology supports their long-term operations forecast for the 29M, 37.5M or High RJ Fleet. Thus, the resulting operational and environmental analyses are inadequate.	Unidirectional Runway 14/32 would be principally used by regional non-jets, general aviation and small jet aircraft capable of landing or taking off in 5,000 feet. Appendix E of the Airside Project Draft EIS/EIR contains the fleet mix for each scenario. Design Category C-III for unidirectional Runway 14/32 indicates the highest approach speed and widest wingspan of the aircraft to use the runway. Approach Category C includes those with speeds from 121 to 140 knots; Design Group III designates wingspans from 79 to 117 feet. Several of the general aviation and commuter aircraft have approach speeds or wingspans in these ranges. In addition, as demonstrated by Section 3.3 of this Final EIS, a high percentage of regional jets at Logan Airport are expected to use this runway. The 37.5M High RJ Fleet analysis demonstrates that the new runway will reduce delays and add operational flexibility even with the high regional jet scenario.
18.167	Fleet Mix/Forecast	General Aviation	The current forecasts in the 1999 ESPR and the 37.5 M High RJ Forecasts both reflect substantial long-term gains in general aviation activity, primarily due to business jets (typical type Lear 35). Massport needs to address this component of the market and offer specific alternatives to shift these operations to other airports so as to minimize these operations at Logan. If delay reduction is really the intention of Massport, why are their long-term forecasts showing increasing general aviation activities? This seems contrary to their goals of reducing delay.	Compared to historic growth in general aviation (GA) activity, the 37.5M High RJ fleet assumes only modest growth in GA operations. From 1990 to 2000, general aviation operations at Logan Airport increased at an average annual rate of 3.5 percent per year, from 24.976 in 1990 to 35,233 in 2000. In the 37.5M High RJ forecast, GA operations are forecast to increase at just 1.0 percent per year increasing from 35,233 in 2000 to 41,057 in 2015. Logan Airport accommodates only a small portion of the region's GA activity. For example, Hanscom Field, the region's largest GA reliever airport, accommodated 212,000 GA operations, more than 6 times the GA activity at Logan Airport. Even capacity-constrained airports, such as New York LaGuardia, accommodate some GA activity. At LaGuardia, six out of approximately 80 hourly slots are allocated to GA aircraft.

Community Advisory Committee Anastasia S. Lyman

Code	Topic 1	Topic 2	Comment	Response
18.168	Noise	55dB DNL	The most inappropriate and insensitive aspect of this chapter and of the entire document is reliance on the FAA definition of the "threshold of noise compatibility with residential land use" ... it ignores a large body of scientific evidence and opinion and the determinations and practice of many other responsible agencies both US and international. EPA has recommended 55 dB DNL as the goal for outdoor noise exposure in residential areas, and HUD has accepted that recommendation. 55dB DNL should be identified as the "threshold of incompatibility" with aircraft noise for the areas impacted by Logan operations. Exposure contours and exposed populations within those contours should be shown, tabulated and compared for all alternatives. Measures to reduce or mitigate all noise exposure within those contours, from the most severe to the least severe, should be identified and examined as to cost and effectiveness.	The FAA as well as the Federal Interagency Committee on Aviation Noise (FICAN, a special government committee which includes among its members the U.S. EPA and HUD) recognize a DNL of 65 dB or above as indicative of significant noise impact, and the Preferred Alternative provides the opportunity to reduce noise exposure to the population exposed to the highest noise levels above DNLs of 75 dB and 70 dB. It is still the consensus of the scientific community in this country and much of the rest of the world that DNL remains the best descriptor of environmental noise, thus the Supplemental DEIS/FEIR and prior related documents incorporated DNL contours and population counts down to 60 dB, counts of people who experience different degrees of change in DNL, and DNL values as low as 20 to 25 dB caused by ground activity. In addition to DNL measures, the Supplemental DEIS/FEIR and prior related documents also included summaries of nighttime equivalent sound levels, changes in maximum sound levels, times above 5 threshold sound levels for nighttime hours and for 24-hour days, and equivalent sound levels as low as 20 to 25 dB caused by ground activity. Both Massport and the FAA believe it is most appropriate to reduce noise in the most heavily impacted areas first. Thus, the greatest noise benefit of Runway 14/32 is derived by reducing noise levels for those most heavily impacted (people within the DNL 70 dB and DNL 75 DB contours) and by shifting flights over Boston Harbor while reducing the total number of nighttime flights.
18.169	Air Quality	Odor Impacts	Another inappropriate and insensitive aspect of this and succeeding Chapters is the treatment of odor impacts in the immediate Logan surroundings from aircraft operations. These odors are real, they are annoying, and they may be associated with chemicals having other impacts as well. Massport persists in failing to apply appropriate emission factors and dispersion/exposure models in the analysis of this concern. While the changes in this situation associated with any of the alternatives under consideration may prove to be minimal, the larger problem goes unaddressed.	It is not inappropriate since the Preferred Alternative will actually decrease emissions. Volatile organic compounds (VOCs) from low-power aircraft emissions (i.e. taxi-in, taxi-out, delay and idle) are considered to be the most representative of potentially odor-causing air emissions. The Preferred Alternative including Runway 14/32 would decrease overall odor-causing hydrocarbon emissions when compared to the No Action Alternative. This is illustrated in Table 6.4-7 and Figure 6.4-5 of the Supplemental DEIS/FEIR. The dispersion analysis indicates that the Preferred Alternative will have lower concentrations of odor-causing VOCs at all receptors other than at Jeffries Point. The minor increase at Jeffries Point is expected to be indistinct from the No Action Alternative.
18.170	Fleet Mix/Forecast		The "base year", for analysis for this Supplemental DEIS/FEIR unfortunately has been selected as 1998. In the year 2000, all Stage 2 aircraft were eliminated from the U.S. fleet. It is indicated in the text that this likely reduced noise exposure by about 3 dB. The combination of a short-term trend to a lower level of aircraft operations and the elimination of Stage 2 jets has likely resulted in the lowest noise exposures around Logan for several years and the lowest likely to be experienced in the future. Affected publics and decision-makers should clearly perceive this situation, which opportunity can only be afforded by full presentation and comparison of the information for the year 2000 in a manner comparable to that of the selected base year.	The Supplemental DEIS included delay and environmental analyses for 1998 to reflect recent conditions and to provide context to the delay problem at Logan Airport. The appropriate comparison for assessing future year conditions and the effectiveness of the Airside Project is a comparison of the Preferred Alternative to the No Action Alternative, not a comparison of the Preferred Alternative to the base year. The 29M Low Fleet scenario includes 22 daily operations in Stage 2 aircraft (depending on the alternative examined), which represent about 2.5 percent of the total daily jet operations in that fleet. (Refer to Table 6.2-1 of the Supplemental DEIS/FEIR). In the shift to a post 1999, 100 percent Stage 3 fleet, some of these aircraft have received hushkits resulting in very little improvement in the noise of individual over flights (and hence, little improvement in DNL), while some were converted to full Stage 3 airplanes. However, on balance, the total number of Stage 2 operations in the 29M Low fleet is small, and a revised 29M Low fleet scenario would likely include a significant number of hushkitted airplanes. For these reasons, it is estimated that the presence of the Stage 2 airplanes in the 29M Low fleet overstates noise exposure by only a few tenths of a dB, which does not represent a material difference.

Community Advisory Committee Anastasia S. Lyman

Code	Topic 1	Topic 2	Comment	Response
				The statement in the Supplemental DEIS that refers to a potential 3db improvement from the elimination of Stage 2 aircraft is based on a specific analysis conducted in the 1998 GEIR. The potential 3dB improvement refers to certain communities off of Runway 27 and assumes (1) 100 percent compliance with the Runway 27 ROD flight track corridor and (2) conversion of all Stage 2 aircraft to full Stage 3 aircraft (i.e., no hushkit conversions). In reality, when the Stage 3 regulation went into effect, carriers hushkitted their aircraft rather than converting them to full Stage 3. A 3db reduction overstates the actual short-term improvement that will result from the Stage 3 regulation.
18.171	PRAS	Reports	The SDEISFEIR could have been more useful in this regard if in Chapter 4 information on dwell and persistence were included, rather than citing its availability in Massport reports.	Chapter 4 of the Supplemental DEIS/FEIR does include dwell and persistence results for the 29M Low fleet, the 37.5M High fleet and the 37.5M High RJ fleet. Similar results for the other fleets are contained in the Draft EIS/EIR.
18.172	Noise	Flight Tracks	The utility of Figures 5.2-1 and 5 2-2 would be improved by providing separate figures for jet and for turboprop aircraft operations. These 2 figures are of course somewhat idealized. The statement in the caption of Fig. 5.2-1 stating "Jet departures cross the shoreline of the South Shore at or above 6,000 ft." is a statement of intent rather than of fact. Other Logan data has shown less than full conformance to that requirement.	Jet and turboprop arrival and departure tracks are shown separately in Figures 6.2-1 through 6.2-4 of the Supplemental DEIS/FEIR. These figures, as well as Figures 5.2-1 and 5.2-2 of the Supplemental DEIS/FEIR, illustrate the breadth of radar traces and modeled tracks that go into the noise modeling of each contour set forth in the Airside EIS analysis. The flight track monitoring report, presented in the 1999 ESPR for April 1999 through September 1999, indicates that approximately 90 percent of the monitored jet departures over the South Shore crossed the shoreline at an altitude above 6,000 feet.
18.173	Noise	Flight Tracks	The assertions of the South Shore communities that approaches to 33L pass directly over Hull High School suggest that the track depicted in Figs. 5.2-2 and 6.2-2 is not realistic. This matter should be further reviewed.	Figures are graphical representations of ARTS radar tracks and were taken from the ARTS data. Figures 5.2-1 and 5.2-2, and Figures 6.2-1 through 6.2-4 are illustrative of the extent to which surrounding communities are overflown by aircraft. The notes at the bottom of each figure indicate approximate altitudes of aircraft out to distances of ten miles -- well beyond even the DNL 60 dB contour off of any given runway end. Except for the estimated departure tracks off of Runway 27 and the projected tracks to and from the proposed new unidirectional Runway 14/32, the locations of the tracks used to model noise exposure and the distribution of traffic on those tracks have utilized ARTS radar data from Massport's noise and operations monitoring system.
18.174	Noise	Flight Tracks	The FAA should evaluate the feasibility of an approach path for all RW33 landings that passes north of the Hull peninsula before acquiring the runway heading, at least under VFR conditions pending implementation of a GPS-based ATC system. All such flights from the south and west should be vectored to pass over inhabited areas at an altitude of at least 6000 feet.	The FAA is responsible for the safe and efficient operation of the national airspace system and is charged with following existing noise abatement procedures. While this comment is not related to the Airside Project, FAA has nevertheless expressed a willingness to continue to evaluate alternate approaches to Runway 33L.

Code	Topic 1	Topic 2	Comment	Response
18.175	Noise	Flight Tracks	There should be a further statement, comparable to the admission and commitment relative to RW 27 departure track conformance appearing in Section 5.2.3.2, of FAA intent to ensure compliance. In both cases, procedures and equipment sufficient to provide both pilots and controllers with the capability to conform to the required constraints should be procured and installed forthwith. It is noted these figures are mislabeled as "...Tracks for Existing Runway Configurations."	The commitments described regarding Runway 27 track conformance were explicitly made in the 1996 Record of Decision (ROD) for the EIS on Runway 27 Departure Procedures. In order to take advantage of compatible land use, the ROD established the need to fly a very narrow corridor and monitor compliance with this corridor. This requirement for monitoring compliance is unique to Runway 27 at Logan, and has no applicability to Air Traffic Control (ATC) procedures for the proposed unidirectional Runway 14/32. The flight tracks depicted in the Draft EIS/EIR and the Supplemental DEIS/FEIR are representative of the new flight tracks that would be used for approaches to Runway 32 and departures from Runway 14. Flight tracks will differ from existing Runway 33L/15R air traffic control procedures only for portions of flight over the water. The commenter correctly points out that Figures 5.2-1 and 5.2-2 on pages 5-15 and 5-17 are incorrect. They are labeled as showing departure and arrival flight tracks for the existing runway configuration. However, 5.2-1 includes departures from proposed new Runway 14 and 5.2-2 includes arrivals to proposed new Runway 32. These have been corrected and relabeled in the Executive Summary of this Final EIS.
18.176	Runway 14/32	Flight Tracks	Figs. 5.2-2 and 6.2-2 show an offset approach track to RW 32. The extended centerlines of RWs 33L and 32 cross at about the Hull peninsula, and approaches to these 2 runways will have to be adjusted to avoid conflicts. We have been seeking information on the proposed approaches during and since the ARC process. Any impact on the projected capacity of these runways associated with ATC approach procedures and tracks should be discussed.	The capacity assumptions of the east-west runway combinations can be achieved with the tracks as shown in the Supplemental DEIS/FEIR. The final approach path will be parallel to that for Runway 33L, and will involve a slight “dogleg” turn to the left for landing. This is a very common procedure for visual and non-precision instrument landings by fixed-wing aircraft.
18.177	Mitigation	Commitments	The departure procedures for RW 27 have been in effect now for a full 5 years, yet still are not being fully complied with despite a full EIS process and ROD. All the FAA is willing to commit to at this time is "we'll try to do better" (p. 5-19). That statement is hardly likely to engender community confidence in other FAA/Tower commitments, such as "achieving substantially better conformance to PRAS" or "maintaining over-water tracks for departures from 15L and 14" or even "RW 14/32 will be unidirectional".	Refer to Response to Comment 18.175. Proposed Runway 14/32 allows unidirectional operations only - i.e., all aircraft arrivals would occur over Boston Harbor to the Runway 32 approach and all departures would initiate from Runway 14 heading out over Boston Harbor. Flight tracks will differ from existing Runway 33L/15R air traffic control procedures only for portions of flight over the water. During very high demand periods, the controllers have little or no flexibility for runway selection and PRAS recommends an appropriate runway configuration to meet the demand. Unidirectional Runway 14/32 would give the controllers considerably more flexibility and allow them to improve achievement of PRAS goals. Section 4.3 of the Supplemental DEIS/FEIR demonstrates that the controllers have been improving conformance with respect to PRAS recommendations. Massport's Section 61 Findings for the Airside Project, reprinted in Appendix B of the Final EIS, contain mitigation commitments for more comprehensive monitoring of PRAS.
18.178	Noise	Nighttime	It is stated (p. 5-24) that the TAN and TA24 threshold levels were selected on the basis of speech interference. The more stringent and important criterion of sleep interference should have been selected. This requires selection of significantly lower thresholds than the minimum of65dB.	Though the effect of aviation noise on sleep is a long-recognized concern of researchers interested in addressing the impacts of noise on people, there are no clearly identified criteria for sleep disturbance, and historical studies have used both single-event and cumulative metrics to examine the exposure. For this EIS, the Night Equivalent Sound Level (LeqN) was calculated at 23 selected locations for all fleets and scenarios. Tables 6.2.17 and 6.2.18 of the Supplemental DEIS/FEIR report these data for the 29M Low and 37.5M High Fleet scenarios of the Supplemental DEIS/FEIR. The results show that, at most locations, the LeqN for the future fleets is lower than for the 1993 case. Where there is an increase in LeqN, the reason was

Code	Topic 1	Topic 2	Comment	Response
				the increase in flights for the No Action Alternative, which generally was mitigated by the Preferred Alternative. These results indicate that there will be less sleep disturbance in the future than that currently experienced. Refer to Section 7.4.1 of the Supplemental DEIS/FEIR for a discussion of cumulative noise impacts.
18.179	Noise	Discrepancies	The corrections to the monitoring system response to aircraft-only signals are encouraging (p. 5-28 and Table 5.2-5). However, 50% of the comparisons of INM predicted and monitored noise exposure show a significant difference, indicating clearly the need for further improvement.	FAA continues to oversee Massport improvements to both its noise monitoring system and its noise modeling in order to reduce these differences wherever possible. As an example, FAA Headquarters recently approved Massport's proposed modification to the INM to account for "hill effects" in Orient Heights. The noise contours were then revised and formed the basis for the FAA New England Region's approval of an expanded sound insulation program. A review of past Logan Airport GEIRs and Annual Updates shows a continual improvement in the correlation between measured and modeled noise levels. This is expected to continue in the future.
18.180	Air Quality	NOx	Aircraft engine emissions from operations at Logan of oxides of nitrogen represent a significant source of that ozone precursor. These emissions, calculated over the LTO cycle of operations below 3000 feet elevation and therefore ignoring emissions at higher altitudes, represent about 85% of emissions of those contaminants from Logan operations. NOx emissions are increasing due to the design differences between Stage 2 and Stage 3 aircraft engines. They will increase further due to increases in operations of jet aircraft at Logan. Yet no effort is being considered to reduce those emissions. Instead, Massport announces proudly a program to go after sources responsible for less than 15% of the current emissions!	The Preferred Alternative shows air quality benefits when compared to the No Action Alternative. Emissions of both NOx and VOCs are shown to increase over time because of increased aircraft operations activity at Logan Airport. These emissions are lower with the Preferred Alternative, when compared to the No Action Alternative largely because of improved airfield efficiencies with the proposed Runway 14/32 and the taxiway improvements. Additionally, Massport has no authority to regulate aircraft engine emissions.

Community Advisory Committee Anastasia S. Lyman

Code	Topic 1	Topic 2	Comment	Response
18.181	Noise	INM Model	It must be remembered that the population noise exposure levels and numbers in the Supplemental DEIS/FEIR and other related or preceding reports are estimates, not precise figures. Statements of confidence limits, error bars, or probabilities should accompany them. The data regarding flight tracks and elevations is an idealized representation of the real world. It is based on assumptions regarding actual operations and of the fleet that performs them; as to schedules, numbers, and aircraft types. Therefore, the depicted contour intervals are bands of somewhat uncertain location and width rather than bright lines. Third, the population estimates are derived from the best available information that in this case is the 1990 census tract data. The information is outdated albeit the best available...and the algorithm used in the INM assumes the population in a given tract to be evenly distributed over the tract, which rarely is the real case. Taking all of that into account means that the principal value of the exercise is to provide comparisons of impacts of future scenarios, which is what the proponent has principally intended in this case despite having failed to make that entirely clear.	The INM approach to counting population does not assume people are distributed uniformly over each census block. Rather, they are assumed to be concentrated at a centroid generally near the middle of each block. If the population centroid was contained within the contour, the entire population of the block was counted as in the contour. Testing of the two methods during earlier phases of the project indicated no material difference between the two approaches. Use of the pinpoint approach meant that each census block "centroid" could be assigned a pair of coordinates at which noise levels would be computed precisely. Population counts for all alternatives have been recomputed using the new year-2000 census data. The results are presented in the body of the Supplemental DEIS/FEIR.
18.182	PRAS	Utilization	The first of these assumptions is that Tower controllers will in the future attain significantly greater conformance of operations with the "PRAS" criteria concerning runway end utilization and overflight dwell and persistence. These are goals and criteria, not mandates or orders. The degree of attainment has been poor in the past. Despite important efforts to improve the utility of the system, the degree of attainment or conformance remains a function of the personnel of the FAA Tower. Their workload and their ability to adjust to the recommendations of the PRAS system is affected by weather, runway availability, instantaneous mix of aircraft, and intensity of operations, and by the other tools available to them and the pilots. It is for those reasons we have requested (without success, so far) that alternative forecasts be developed that reflect maximum throughput of aircraft based on weather conditions and runway availability, intending that a more realistic sense of the likely long-term future noise exposure be provided for comparison.	The degree of attainment of the PRAS goals depends on two factors: how well the PRAS recommendations meet the goals, and how well the controllers are able to follow the PRAS recommendations. The limitations on the former are weather, demand and Logan Airport's runway layout. Construction of Runway 14/32 will provide another high-capacity configuration that will enable PRAS recommendations to approach the goals much more closely, despite continually growing demand. Since the "safe and expeditious flow of traffic" is the FAA's first priority, PRAS recommendations may occasionally be modified or disregarded. Inaccurate weather or demand forecasts, equipment outages, staffing or workload issues may prevent the FAA from accepting the PRAS recommendation. The PRAS monitoring and reporting mitigation measure discussed in Section 8.5.4 of the Supplemental DEIS/FEIR will assist in this regard, as will the additional flexibility of Runway 14/32. Overall, however, the Supplemental DEIS/FEIR demonstrates that the controllers have been improving conformance with respect to PRAS goals.

Community Advisory Committee Anastasia S. Lyman

Code	Topic 1	Topic 2	Comment	Response
18.183	Alternatives	All Alternatives	The limitations in the Supplemental DEIS/FEIR to comparison of the "Preferred Alternative" (all actions except Peak Period Pricing which the CAC does not support) with the "No-Build" case is not appropriate. Many of the taxiway proposals appear independently buildable and beneficial, and are not controversial (with the exception of Centerfield Taxiway proposal). Massport has circumscribed the potential delay reduction benefit of Peak Period Pricing by unreasonably constraining its introduction, and appears to ignore its projected benefits under several scenarios. The requirement of this presentation that a commentator return to the DEIS/R for other comparisons is not just inconvenient, it forces reliance on outdated information. We have argued against this limitation in several forums but have been rebuffed, and therefore draw the inference that Massport and the FAA are not committed to demand management and will not accept even as a phased approach less than the full construction project as initially conceived. This rejection in principle of demand management is illustrated by the first sentence of the second paragraph of Section 6.2.1.1.	The decision to limit the Supplemental DEIS/FEIR to report only on the most likely future fleets and the Preferred and No Action Alternatives was intended to simplify the document and focus the reader on the benefits and impacts of the Preferred Alternative. Including all 32 fleet/alternative scenarios in the main volume of the Supplemental DEIS/FEIR would have produced an unwieldy review document. The operational and environmental results of the other alternatives, such as Alternative 2 which includes the taxiway improvements but not Runway 14/32, were included in Appendices C, E, and F of the Supplemental DEIS/FEIR for reference. It is unclear how the first sentence of the second paragraph of Section 6.2.1.1, "The Preferred Alternative has no effect on the total number of flights in and out of Logan Airport -- air carriers and cargo operators will schedule their aircraft to meet the public's travel and shipping needs,", rejects demand management. The comment clearly refers to the Preferred Alternative, of which demand management is not a component. Massport's commitment to demand management is clear. In its Section 61 Findings pursuant to the Massachusetts Environmental Policy Act, Massport committed to implementing an enforceable peak period pricing program, or an alternative demand management program with comparable effectiveness, for Logan Airport. The objective of this program will be to avoid or reduce delays associated with overscheduling of Logan Airport's available capacity in good weather conditions. The goal is to have a demand management program in place before overscheduling conditions occur at Logan Airport. The FAA acknowledges that Logan Airport is one of the nation's most delayed airports and that Massport has committed to and will propose to implement a demand management program to reduce overscheduling delays. The FAA expects that any such program that is proposed for implementation will be consistent with applicable Federal law. The FAA is currently working with the U.S. DOT to establish national guidelines for demand management programs at U.S. airports. As part of this national effort, Logan has been selected as one of three airports to serve as a case study for U.S. airport demand management strategies.
18.184	Noise	Metrics	Additional noise analysis should be performed to include an analysis of flight tracks impacts by alternative noise metrics (which has been provided at other airports (Seattle Part 150 study)) including: -probable number of overflights by geographic area (55 DNL through 75 DNL) -population likely highly annoyed, using appropriate relationships -people potentially awakened (sleep disturbance) looking at both open and closed windows using SEL at individual points on the ground with the sleep disturbance curve produced in 1997 by the Federal Interagency Committee on Aircraft Noise -people potentially experiencing speech interference, using the time above metric broken down to people exposed to sound above 65 dB for periods greater than 10, 30, 60, 90, 120 and 150 minutes per day.	The FAA requires the use of DNL and encourages the use of other metrics to supplement DNL analyses. Some of these metrics are discussed in the comment. In this EIS/EIR, noise analyses have included a variety of supplemental analyses including nighttime equivalent sound levels, the numbers of minutes above 55, 65, 75, 85, and 95 dBA both during nighttime hours as well as during the full 24-hour day, differences in maximum sound levels, and detailed analyses of ground noise associated with each alternative.

Community Advisory Committee Anastasia S. Lyman

Code	Topic 1	Topic 2	Comment	Response
18.185	Delay	Modeling	The argument (p. 6-8) that daytime congestion will increase nighttime operations is belied by Fig. 4.2-1, which shows the daytime peak ending at 6 PM, after which demand tails off rapidly. To suggest that congestion (or in the alternative, the impact of Peak Period Pricing) will push or cause the rescheduling of so many operations into the evening period that some operations will be forced into the very late evening is inappropriate. This questionable assertion is reflected in Table 6.2-1 as well as in the text. Admittedly, shifting operations into the evening hours is not desirable, but it doesn't have the same impact as shifting them into the nighttime hours.	Figure 4.2-1 reflects historic demand profiles from 1995 and 2000, while Table 6.2-1 and the associated text refer to the day/night operations for the future 29M Low and 37.5M High fleets. Figure 4.2-1 of the Draft EIS/EIR presented the demand profile for the 29M Low scenario, while Figure 1.3-2 of the Supplemental DEIS/FEIR presented the profile for the 37.5M High scenario. These figures better reflect the discussion on Page 6-8 of the Supplemental DEIS/FEIR. It is clear that overscheduling exists, and that demand exceeds capacity from 2PM to 8PM under the 37.5M High scenario (See Figure 1.3-2 of the Supplemental DEIS/FEIR). Since demand exceeds the airport's three-runway capacity of 120 hourly operations for six consecutive hours, a large number of operations are delayed later and later in the day. It is only between 8PM and 10PM that delays can begin to decrease, as lower demand levels allow recovery. However, even these hours have demand levels of 90 hourly operations or higher. Given that any operation delayed beyond 10PM is considered a nighttime operation (the definition associated with the DNL calculation), it is clear that congestion could easily push operations from the daytime into the nighttime hours, particularly under northwest wind conditions, when the airport's highest capacity three-runway configurations may be unavailable during the long afternoon/early evening period where demand exceeds 120 for six consecutive hours. Table 6.2-1 reflects this phenomenon, and clearly demonstrates the benefits associated with the Preferred Alternative.
18.186	Noise	Contours	More detailed information (more specific to location than the general INM census data) regarding the population estimates and noise sensitive sites within the 55 dB, 60 dB, 65 dB, 70 dB, and 75 dB DNL noise contour are required that more accurately estimates the current population residing in these areas.	Analysis of noise impacts of the various airside alternatives was performed and is described in Chapters 6 of the Airside Project Draft EIS/EIR and the Supplemental DEIS/FEIR. The noise analysis complies with federal and state scoping directives on the Airside Project Draft EIS/EIR and Supplemental DEIS/FEIR. The FAA as well as the Federal Interagency Committee on Aviation Noise (FICAN, a special government committee which includes among its members the U.S. EPA and HUD) recognize a DNL of 65 dB or above as indicative of significant noise impact, and the Preferred Alternative provides the opportunity to reduce noise exposure to the population exposed to the highest noise levels above DNLs of 75 dB and 70 dB. In addition, with the U.S. Census Bureau's release of year-2000 census data, all population figures have now been updated to reflect the noise impacts of the Airside Projects on the new data. The results are presented in Section 3.8 of this Final EIS.
18.187	Noise	Nighttime	The assumed "significant reduction in nighttime operations" under Alternative 1A ignores the limitation on nighttime operations that has in the past been credited to the Logan noise rule prohibiting Stage 2 aircraft from operating at night. That rule is no longer effective, as Stage 2 aircraft operations have been eliminated entirely. The only barrier to nighttime operations is the scheduling decisions of the operators, free, as Massport asserts, to "schedule their aircraft to meet the public's travel and shipping needs" (p. 6-8). Or, in another view, to optimize the utilization of their fleets by offering low-fare options during night hours and rescheduling positioning movements to times more convenient for them.	As delays increase, nighttime operations also increase. Tables 6.2-1 and 6.2-19 of the Supplemental DEIS/FEIR show that nighttime jet operations are projected to increase from 106 in 1998, to as many as 259 under the No Action Alternative with the 37.5M High RJ Fleet. Many of these future night operations are the result of delays that will occur as demand at Logan Airport continues to increase. One of the direct benefits of the Preferred Alternative is that it will reduce these nighttime operations by 32 to 43 flights depending on the fleet forecast. The official preferential runway use policy for Logan Airport states that the FAA will observe the nighttime overwater routing priorities from 12 AM - 6 AM whenever wind and weather conditions permit. In practice, controllers try to switch to the Runway 33L/15R configuration as soon after 11 PM as demand permits. Refer to Section 4.3.6 of the Supplemental DEIS/FEIR for a discussion of the impact of extending the overwater nighttime routing preference period from 12 AM - 6 AM to 10 PM - 7 AM.

Community Advisory Committee Anastasia S. Lyman

Code	Topic 1	Topic 2	Comment	Response
18.188	Noise		It is apparent that Logan noise impacts and significant community reaction are not confined to the 60 DNL contour area as modeled by the INM and have significantly undermined public understanding of and confidence in the INM model outputs. The following additional measures should be undertaken: -The modeling effort should be extended to incorporate a 55-DNL contour -Additional and/or modified monitoring locations should be established and maintained, sufficient to ensure representative data on actual noise levels in all impacted communities. -The flight track inputs to the INM should be truly representative of actual tracks flown by jet AC under all conditions.	FAA's policy is to examine noise impacts above 65 dBDNL and above 60dBDNL when there is a significant change in noise. FAA does not examine noise impacts below 60 dBDNL because those lower noise levels are compatible with residential uses (as levels within normal urban noise levels). Massport gives regular consideration to the possibility of adding noise monitoring sites to its noise and operations monitoring system and will continue to do so when appropriate sites are identified, subject to the need to stay within operational capabilities and efficiency limits of the system's hardware and software. In late 1997, two monitoring stations (Site 27 at Boston Latin Academy in Roxbury and Site 29 at Lewenburg Middle School in Mattapan) were added to monitor Runway 27 noise impacts. Massport is currently working with community representatives from Jamaica Plain and Hyde Park to locate additional noise monitors in those communities. With the exception of the estimated flight tracks to the new proposed unidirectional Runway 14/32, and the departure tracks from Runway 27 which have been modified slightly by the FAA since the Airside Study was initiated, all other tracks to and from all other runways are based on samples of historical radar data that reflected actual flight activity at the time. Distributions of traffic on each of the tracks were also based on historical radar data.
18.189	Noise		We understand that during nighttime hours of low traffic activity, arriving jet aircraft are allowed unrestricted approaches at altitudes over 3000 feet, which could contribute to nighttime noise impacts not reflected in the INM outputs. This information should be checked, and the practice curtailed or eliminated.	Any large aircraft is normally lined up on its final approach to land at least 4 to 6 miles from the runway and is descending on a three degree glide slope. At four miles, the aircraft is 1,000 to 1,200 feet in the air; at six miles it is 1,600 to 1,800 feet in the air. An unrestricted descent of an aircraft above 3,000 feet, if or when it occurs, would be affecting an aircraft some ten or more miles from the airport and would have no bearing on the noise analyses in this EIS.
18.190	Noise	Metrics	There should be developed a common understanding among the concerned parties of the conditions under which "awareness" of overflights of jet and of turboprop aircraft becomes "annoyance"; and of the degree of annoyance (in a manner analogous to the "Schultz curve".)	The "Schultz curve" is a relationship between noise exposure and the percentage of people highly annoyed by that exposure, as measured by DNL. The relationship has subsequently been reexamined and reaffirmed by others in psychoacoustics such that it remains the best indicator of a groups of peoples' response to environmental noise. The FAA as well as the Federal Interagency Committee on Aviation Noise (FICAN, a special government committee which includes among its members the U.S. EPA and HUD) still recognize a DNL of 65 dB as indicative of significant noise impact and DNL levels above 75 dB as inappropriate for residential use because they are so high. The Preferred Alternative provides the opportunity to reduce noise exposure at this highest level as well as at levels above 70 dB. Nevertheless, all member agencies acknowledge that community annoyance and complaints also occur at DNL levels below 65 dB. As a result, the 60 dB DNL contours are now shown throughout the Supplemental DEIS/FEIR, and the numbers of people within the DNL 60 dB contour are calculated and reported in tables such as 6.2-5 through 6.2-7 and 6.2-20 through 6.2-23.

Community Advisory Committee Anastasia S. Lyman

Code	Topic 1	Topic 2	Comment	Response
18.191	Runway 14/32	Flight Tracks	While the final approach track to RW33L within 5 miles of the runway threshold is "over water", and the same would be true for RW32, it must be noted that a significant portion of approach tracks at altitudes less than 3000 feet are over land. The departure tracks for RW15R and proposed for RW14 are supposed to be over water until an altitude of at least 6000 feet is attained, but that's not always the case. The claims of a substantial shift of operations to "over water" as a result of the construction of RW14/32 must be tempered by recognition that existing operations result in vigorous opposition from the affected South Shore communities.	Aircraft on a final straight-in approach to land on Runway 33L at Logan are typically overflying the tip of the Hull peninsula at altitudes of 1,500 to 2,000 feet above mean sea level. Aircraft departing Runways 15R and 14 make left turns after takeoff and head eastward out the mouth of Boston Harbor, generally but not always staying north of the Hull peninsula, passing it at altitudes between 2,000 and 8,000 feet but averaging approximately 4,000 feet above sea level. These arrival and departure tracks are included in the noise modeling of all Airside EIS alternatives as are similar tracks to and from other runways at Logan. The noise abatement departure procedures for Logan specify that aircraft will be above 6,000 feet before they turn westward (or northward) and cross over the shoreline south of Hull (or in the vicinity of Marblehead). The flight track monitoring report in the 1999 ESPR for April 1999 through September 1999 indicates that approximately 90 percent of 15R jet departures cross back over shore at an altitude above 6,000 feet. Similar performance is expected for Runway 14 jet departures. The FAA's Integrated Noise Model includes noise from these aircraft up to 10,000 feet above the airfield elevation and thus fully accounts for the traffic as it climbs or descends over or near the Hull peninsula. Because aircraft noise generally decreases with increasing distance to the source, noise exposure levels at these higher altitudes will be significantly less than those from aircraft at lower altitudes and at closer distances to the airport. For the large majority of operations that overfly Hull, these lower altitudes occur over Boston Harbor where they have minimal impact on people. By the time the aircraft reach Hull, they are at sufficiently high altitudes that they rarely affect standard noise contours.
18.192	Noise	Flight Tracks	The text should provide additional information on flight tracks out to an altitude of at least 6000 feet. The explanation of the development of the flight tracks should discuss and if possible explain the community observations of inconsistencies with respect to both track and assumed altitude.	Figures 5.2-1 and 5.2-2, and Figures 6.2-1 through 6.2-4 are illustrative of the extent to which surrounding communities are overflown by aircraft. The notes at the bottom of each figure indicate approximate altitudes of aircraft out to distances of ten miles -- well beyond even the DNL 60 dB contour off of any given runway end. Except for the estimated departure tracks off of Runway 27 and the projected tracks to and from the proposed new unidirectional Runway 14/32 (both of which are discussed in the text (e.g. pages 5-14 and 6-10 in the Supplemental DEIS/FEIR), the locations of the tracks used to model the exposure and the distribution of traffic on those tracks have utilized ARTS radar data from Massport's noise and operations monitoring system.
18.193	Alternatives	Runway Use	The utility of the tables in this section would be improved by including comparable information from the DEIS/R for the omitted scenarios, and by also including an appropriate "RJ" scenario. This would enable to comparison by direct inspection of the impacts on use of each runway combination under each alternative for each scenario. (The scenarios should include, in addition to those already in Tables 6.2-2 and -3, 27M High Fleet, 37.5M Low Fleet, and a revised 37.5M RJ fleet.) It would illustrate the impact on projected runway use of a realistic RJ scenario...it might show... That Alternatives 1, 1A and 4 allowed only marginal differences, and demand management was essential to both delay reduction and flight distribution for minimizing noise impact.	Runway use information for the 37.5M High RJ fleet, comparable to that shown in Tables 6.2-2 and 6.2-3 for the other fleets, is contained in Tables 4.7-5 and 4.7-6 of the Supplemental DEIS. The data shows that demand management has no meaningful impact on the distribution of flights by runway end. For example, a comparison of Alternative 4 (No Action) and Alternative 2/3 (Peak Period Pricing without Runway 14/32) shows that Peak Period Pricing alone does not alter runway use. For example, the percentage of arriving flights on Runway 4L/R is 44.7 percent in the No Action and 44.6 percent with Peak Period Pricing (Alternative 2/3). On the other hand, a comparison of the Preferred Alternative to No Action alternative shows a significant change in runway use patterns with the proposed runway. For example, the percentage of flights arriving on Runway 4L/R falls from 44.7 percent(No Action) to 34.3 percent with the Preferred Alternative, which is closer to the PRAS goal of 21.1 percent for Runway 4L/R. The conclusion that demand management has no material impact on runway use is consistent across all fleets analyzed in the Airside EIS.

Community Advisory Committee Anastasia S. Lyman

Code	Topic 1	Topic 2	Comment	Response
18.194	Noise	Contours	Direct visual comparisons of scenarios by DNL contours for at least the No-Action and Preferred Alternatives was facilitated in Section 6.2.3, Figs. 6.2-5, -6,-7, and -8 through same-sheet presentations of scenarios. For the RJ fleet, the only same-sheet comparison afforded is for the 65 DNL contour for the No-Action and Preferred Alternatives. The other 3 figures are of single scenarios, rendering efforts at visual comparison very difficult.	The text in Section 6.2.7.4 describes the differences by community.
18.195	Runway 14/32	Runway Use	...we project there will be considerably less usage of RW 32 for landings in the future than is predicted in the Supplemental DEIS/FEIR. Therefore, the delay reduction and the noise exposure improvements predicted for the Preferred Alternative should be scaled back, as the proposed runway likely will not afford the projected degrees of opportunities to: (a) reduce delays in strong NW winds through substantial shifting of landing traffic to RW 32 from RW 33L and (b) permit the Tower to shift traffic from the N-S runways to the 14/32-33L-27 combination. As the proposed new runway would appear to be of questionable value in delay reduction and noise abatement, Massport and the FAA should shift their focus and emphasis to demand management techniques such as Peak Period Pricing, while monitoring the development and insertion into the Logan fleet mix of Regional Jets and any reduction in use of non-jet carrier aircraft.	The CAC's analysis of current RJ orders by U.S. airlines fails to consider which carriers are likely to have a significant presence at Logan. American and Delta are currently the leading RJ operators at Logan. Both airlines are undertaking terminal redevelopment projects, and each has forecast a significant number of future RJ operations at Logan. American has projected its future RJ fleet at Logan to be comprised exclusively of Embraer models, while Delta's future RJ fleet projection is predominately Dornier regional jets (approximately 75 percent), with a much lower presence of the Canadair CRJ. USAirways, currently Logan's 3rd leading operator of regional jets currently operates only Embraer ERJ's at Logan through its regional affiliate, Chautauqua Airlines. The RJ fleet and orders of "carriers likely to operate at Logan" as described by the CAC are heavily weighted by the fleets of Comair and Atlantic Southeast Airlines (ASA), two of Delta's regional carrier affiliates that both operate substantial fleets of Canadair CRJ's but have only minimal presence at Boston. Atlantic Southeast's network is focused at Atlanta and Dallas/Ft. Worth and the carrier has no flights at Logan. Comair RJ flying is concentrated at Cincinnati and the carrier operates only 4 of its system wide 770 daily RJ departures at Boston (July 2001). Delta's principal regional partner at Boston is ACJet which operates 42 of the carrier's 46 daily RJ departures from Logan, all with Dornier 328Jets. By including carriers with industry leading fleets of CRJ aircraft but who have little or no presence at Logan, the CAC analysis substantially exaggerates the likely future role of the Canadair CRJ at Logan. This overstatement is relevant since an FAA independent review of probable RJ use of the proposed 5,000 foot runway indicated that all RJ models except the CRJ were likely to use the runway. The 37.5M High RJ Fleet was specifically developed and analyzed for the Supplemental DEIS to determine how significantly expanded regional jet usage would affect the operational and environmental benefits and impacts of the proposed airside improvements at Logan. The 37.5M High RJ fleet scenario contains 184,000 annual regional jet operations at Logan, or more than twice the current level. Based on projections of regional jet use for the proposed 5,000 foot Runway 14/32 developed by the FAA, the Embraer 135/145 models would use the runway for arrivals during dry weather conditions, and the Dornier 328 Jets would use the runway during all weather conditions. Under these assumptions, when Runway 14/32 is in use it would be utilized for arrivals by approximately 70 percent of the projected future RJ fleet mix at Logan. The analysis of the Preferred Alternative under the 37.5M High RJ fleet was consistent with the findings of the previously developed fleet scenarios, showing a substantial delay reduction benefit and the ability to more equitably balance the geographic distribution of Logan's flight activity and noise impacts. Furthermore, a sensitivity analysis demonstrated that the majority of the delay reduction benefits would be retained even at levels of regional jet use significantly below those identified by the FAA's independent review. Several of the largest regional carriers that operate regional jets at Logan Airport, including American Eagle and ACJet (a Delta Connection carrier), have provided letters confirming their intentions to use Runway 14/32 when it becomes operation. Refer to Appendix F of this Final EIS for letters from these airlines and others.

Code	Topic 1	Topic 2	Comment	Response
				Also, in its Section 61 Findings pursuant to the Massachusetts Environmental Policy Act, Massport committed to implementing an enforceable peak period pricing program, or an alternative demand management program with comparable effectiveness, for Logan Airport. The objective of this program will be to avoid or reduce delays associated with overscheduling of Logan Airport's available capacity in good weather conditions. The goal is to have a demand management program in place before overscheduling conditions occur at Logan Airport. The FAA acknowledges that Logan Airport is one of the nation's most delayed airports and that Massport has committed to and will propose to implement a demand management program to reduce overscheduling delays. The FAA expects that any such program that is proposed for implementation will be consistent with applicable Federal law. The FAA is currently working with the U.S. DOT to establish national guidelines for demand management programs at U.S. airports. As part of this national effort, Logan has been selected as one of three airports to serve as a case study for U.S. airport demand management strategies.
18.196	Air Quality	Odor Impacts	This section (Section 6.4 Air Quality/Odors) of the Report has changed very little from that of the DEIS/R. In general, we find the responses to our DEIS comments on this section to be inappropriate or inadequate, and therefore iterate those comments and recommendations for further study or analysis by reference hereto.	According to the air quality analysis, the Airside Project associated with Runway 14/32, the Centerfield Taxiway and other airfield improvements would decrease overall odor-causing hydrocarbon emissions when compared to the No Action Alternative. This is illustrated in Table 6.4-7 and Figure 6.4-5 of the Supplemental DEIS/FEIR and largely attributable to improved airfield operating conditions (i.e. less ground-based delay periods when aircraft are engines are idling and generating potential odor-causing compounds). The dispersion analysis indicates that the Preferred Alternative will have lower concentrations of odor-causing VOCs when compared to the No Action Alternative or, at least, help to keep the emissions below present-day levels.
18.197	Air Quality	Odor Impacts	The odor-dispersion modeling approach has not been modified or extended to include consideration of short-term exposures to odorants from aircraft engine emissions,...This is of special concern as to the "Bayswater Street" area, where odorant emissions from taxiing aircraft in the northern portion of the airfield proceeding to takeoff on RW 22L/R would be transported. If,...the efficiency of those taxiing operations is significantly improved and numbers of operating aircraft in that area at any time interval do not, peak odor concentrations should not increase. However, the daily periods during which operations occur at or near peak rates will increase as operations increase, and therefore the time durations of exposure to peak odor concentrations in the Bayswater Street area will increase.	While it is acknowledged that aircraft operations will increase over time, unrelated to the Preferred Alternative, in all cases air quality impacts would be less with the Preferred Alternative than the No Action Alternative. Volatile organic compounds (VOCs) from low-power aircraft emissions (i.e. taxi-in, taxi-out, delay and idle) are considered to be the most representative of potentially odor-causing air emissions and are modeled as a surrogate for odor emissions. The results of the emissions inventory show that the proposed new runway, Centerfield Taxiway, and other airfield improvements would lead to a decrease in odor-causing hydrocarbon emissions, when compared to the No Action Alternative. This is illustrated in Table 6.4-7 and Figure 6.4-5 of the Supplemental DEIS/FEIR. The findings indicate that the Preferred Alternative will result in lower concentrations of odor-causing VOCs or that the change in concentrations will be imperceptible in the short term (i.e. 29M). In the long term (i.e. 37.5M) the model results show that these VOCs will remain below present-day levels.

Community Advisory Committee Anastasia S. Lyman

Code	Topic 1	Topic 2	Comment	Response
18.198	Air Quality	Centerfield Taxiway	If the space made available by the presence of Taxiway November and the Centerfield Taxiway together is utilized by the FAA to place more taxiing aircraft in the northern portion of the (north of RW 33L), then the odor emission source strength in that area will be increased. The results could well be detected in the Bayswater Street area as an increase in odors (although as agreed in our DEIS comments odor perception is logarithmic and it is not likely that a logarithmic increase in source strength could occur). The community concern should be addressed, and could be addressed in one of two ways: a. An agreement, backed by appropriate monitoring, could be reached to limit the number of aircraft on the ground north of RW 33L at any time to a number not in excess of the current practice and allowed under the current understanding with the community. b. Alternatively (and of lower preference), air quality monitoring for VOCs could be conducted at a suitable point in the area. Such monitoring should be automatic and continuous and for the shortest time intervals that best available technology affords.	The planned taxiway improvements are designed to improve aircraft ground movement efficiency and safety, and also to reduce aircraft taxiing delays; thereby reducing associated noise and emissions. For example, when using Runways 22L/R for departures, the Centerfield Taxiway would provide an alternate taxi route for Runway 22L departures to bypass the queue for Runway 22R. Moreover, Runway 22L departures represent less than ten percent of the total departures at Logan Airport. Under existing conditions, aircraft needing to depart on Runway 22L (typically heavy jets, such as 747s with long takeoff distance requirements) must wait in the queue on Taxiway November with aircraft departing on Runway 22R. With the Centerfield Taxiway, aircraft departing on Runway 22L could depart quickly after reaching the runway end, and the number of aircraft queuing on Taxiway November should decline. Also, the aircraft on the Taxiway November should be smaller, implying lower noise and air quality emissions. With the addition of Runway 14/32, overall use of Runways 22R and 22L for departures would decline, further reducing emissions. According to the air quality analysis, the Preferred Alternative including Runway 14/32, the Centerfield taxiway and other airfield improvements would decrease overall odor-causing hydrocarbon emissions when compared to the No Action Alternative. This is illustrated in Table 6.4-7 and Figure 6.4-5 of the Supplemental DEIS/FEIR and largely attributable to improved airfield operating conditions (i.e. less ground-based delay periods when aircraft are engines idling and generating potential odor-causing compounds. A dispersion analysis of odor-causing VOC compounds was also undertaken as part of the Supplemental DEIS/FEIR. The Bayswater section of East Boston was among the areas analyzed. The findings indicate that the Preferred Alternative will result in lower concentrations of odor-causing VOCs or that the change in concentrations will be imperceptible in the short term (i.e. 29M). In the long term (i.e. 37.5M) the model results show that these VOCs will remain below present-day levels.
18.199	Air Quality	Dispersion	It is noted that in the comparison of the Logan Dispersion Modeling System and the FAA Emission and Dispersion Modeling System VOC's were not compared. Further, the EDMS contains the same shortcomings as the LDMS, in that the dispersion model is Gaussian and the averaging time is one hour.	The sensitivity analysis used to compare the Logan Dispersion Modeling System (LDMS) with the FAA's Emissions Dispersion Modeling System (EDMS) showed little or no variation in the modeling results, as documented in the Supplemental DEIS/FEIR in Section 6.4.2.2. The FAA's EDMS is the EPA-approved dispersion model for airports and the modeling methodology was conducted following FAA guidelines and other conventional techniques. This includes the modeling of one-hour conditions that are in turn used to calculate longer time-based results (i.e. eight- and 24-hour) as well as annual averages. It should also be noted that meteorological conditions used to conduct the modeling are based on real-world data representing a full year of one-hour recordings taken at the airport.
18.200	Natural Resources	Upland Sandpiper	The Supplemental DEIS/FEIR states that approximately 37 acres of habitat of the state-listed Upland Sandpiper will be eliminated by the proposed Airside Improvement Project, primarily through the construction of the Centerfield Taxiway. It is unclear whether the 37 acres is the footprint of the new and modified pavements proposed in the Airside Improvement Project, or whether it is the total area that will be disturbed by construction.	Collectively, construction of the Centerfield Taxiway and the Taxiway Delta extension will result in the conversion of approximately 37 acres of existing grassland to paved surface, which represents the footprint of the proposed improvements. Massport has developed a comprehensive on-site and off-site Upland Sandpiper habitat mitigation plan in close coordination with the Massachusetts Natural Heritage and Endangered Species Program (NHESP) for loss of such habitat at Logan Airport associated with construction of the Centerfield Taxiway. The plan strives to enhance protection of remaining Upland Sandpiper habitat at Logan Airport without increasing the aviation safety hazards typically associated with birds or hazards to the birds. See Section 4.1 and Appendix A in the Final EIS.

Community Advisory Committee Anastasia S. Lyman

Code	Topic 1	Topic 2	Comment	Response
18.201	Natural Resources	Upland Sandpiper	Massport proposes an on-site mitigation program which, given what would be left of the airfield grasslands and the requirements of airfield operation, is likely as good as could be expected. However, its success in providing continued breeding habitat for this endangered species is far from assured. It would appear that the proposed actions constitute a clear "taking" of the sandpipers that have historically used this area for nesting and feeding.	The Supplemental DEIS/FEIR acknowledged that the proposed airside construction activities constitute a "taking" as defined under the Massachusetts Endangered Species Act. Massport has developed a comprehensive on-site and off-site Upland Sandpiper habitat mitigation plan in close coordination with the Massachusetts Natural Heritage and Endangered Species Program (NHESP) for loss of such habitat at Logan Airport associated with construction of the Centerfield Taxiway. The plan strives to enhance protection of remaining Upland Sandpiper habitat at Logan Airport without increasing the aviation safety hazards typically associated with birds or hazards to the birds. See Section 4.1 and Appendix A in the Final EIS.
18.202	Natural Resources	Upland Sandpiper	Massport also proposes an off-site mitigation program involving the restoration of the "cantonment area" of the Mass. National Guard Camp Edwards property on Cape Cod. The acreage to be restored is stated to be 150 acres. As this area has in the past been valuable habitat for the sandpiper, its restoration and long -term maintenance as grassland habitat would be valuable to grassland nesting species and potentially to additional upland sandpipers, assuming the resulting area of continuous acceptable habitat for the species is at least 250 acres. (Studies have established this as the minimum area the species will utilize successfully.)	The Upland Sandpiper is not a federally protected species. However, under state law, Massport will be required to obtain a Conservation and Management Permit from the Massachusetts Natural Heritage and Endangered Species Program (MNHESP). As part of that process, Massport has worked closely with MNHESP to develop an onsite and offsite mitigation program that will provide a net benefit to the Upland Sandpiper local population. It is anticipated that the mitigation program will be underway before construction of the Centerfield Taxiway or the Delta Taxiway modification. The concept mitigation plan presented in the Airside Project EIS/EIR has evolved through discussions between Massport, the MNHESP and the Massachusetts Air National Guard and/or designee to conform to all applicable requirements of the Massachusetts Endangered Species Act (MESA). It is expected that an area of former Upland Sandpiper habitat at Camp Edwards on Cape Cod will be restored to grassland habitat by removing woody and shrub vegetation to encourage enhancement of the Upland Sandpiper regional population. This restoration area is part of a larger existing habitat that has been degraded over the years and the available area has been decreased. The Massport program to restore and expand the habitat will only benefit the overall Upland Sandpiper population. This restoration effort provides a unique opportunity to expand grasslands in the Commonwealth far in excess of the 40± acres to be lost at Logan Airport.
18.203	Natural Resources	Upland Sandpiper	...it takes about 3 years to establish a grassland stand meeting the needs of the species for nesting and feeding. Therefore, unless the restoration project were completed at least three years prior to the onset of construction at Logan, there would be a period during which the loss of habitat at Logan would not be compensated for.	Refer to response to Comment 18.202.
18.204	Natural Resources	Upland Sandpiper	Another potential inadequacy of this mitigation proposal is the apparently fragile nature of the commitment of MNG to provide long-term assurance of continued maintenance of the area for this purpose. This project assumes the MNG has clear title and authority to permit or undertake and thereafter maintain the habitat restoration project, of course, which has not been established.	Refer to response to Comment 18.202.

Community Advisory Committee Anastasia S. Lyman

Code	Topic 1	Topic 2	Comment	Response
18.205	Natural Resources	Upland Sandpiper	...we suggest the Upland Sandpiper Mitigation Plan as proposed (Section 6.5.5.2) falls short of precluding a "taking" under MGL c. 131A. A "viable alternative for the proposed project" does exist-elimination of the Centerfield Taxiway element of the project. This step would both remove the potential "taking" of the Upland Sandpiper and eliminate a number of community concerns (set forth elsewhere, both currently and in the past) about the impacts of the Centerfield Taxiway. Should, alternatively, Massport convince the relevant agencies that elimination of the Centerfield Taxiway is not acceptable, additional mitigation beyond that proposed and outlined in the Supplemental DEIS/FEIR should be required.	The Supplemental DEIS/FEIR clearly establishes the purpose and need for a Centerfield Taxiway. The purpose of the Centerfield Taxiway is to provide alternative taxi routings for more efficient movement of aircraft between runways and terminal areas, thereby reducing ground delays for arriving and departing aircraft. By diminishing delays, particularly north of Runway 15R/33L, the Centerfield Taxiway would reduce both ground noise and air quality impacts associated with ground operations. It would also alleviate congestion in the vicinity of Terminals B and C, and enhance the general safety of airside operations. In contrast, not constructing the Centerfield Taxiway would obstruct the purpose of the project. In addition, refer to response to Comment 18.202.
18.206	Health	Health Study	There should be a summary of the public health issues reviewed as related to the airside improvement projects. Massport documents the historic and on-going studies but does not provide a summary on the health affects of the proposed projects. Massport should be leading the effort to investigate the risks on health associated with Logan operations.	The Preferred Alternative was chosen because it will reduce delays and will provide environmental benefits compared to the No Action Alternative. Compared to the No Action Alternative, the Preferred Alternative would orient more flights over Boston Harbor, reduce noise in the areas experiencing the highest noise impacts, and improve air quality. These environmental benefits are not detrimental to the public health. The available public health studies for communities adjacent to Logan Airport were reviewed and are presented in Section 6.8 of the Supplemental DEIS/FEIR. The Massachusetts Department of Public Health is conducting a study of the relationship between air pollution and public health, focusing on respiratory and cardiovascular effects for communities within a five-mile radius of Logan Airport. In addition, Massport is conducting an air quality monitoring program in neighborhoods surrounding the airport. Monitoring results will be presented in the ESPR and annual updates. Massport has been cooperating with the Commonwealth of Massachusetts and the City of Boston on public health issues and will continue to facilitate monitoring of airport-related emissions by DEP and others, by assisting in monitoring site selection and providing agencies with air quality data, airport activity data, and meteorological data.
18.207	Alternatives	PPP vs. 14/32	Massport states that no other alternative would accomplish similar goals as the preferred alternative. However, the delay reduction based on the low RJ usage case illustrated in the RJ sensitivity analysis provides almost the same delay savings as the alternative without the runway.	The runway utilization assumptions presented in the Supplemental DEIS/FEIR were developed through an FAA independent analysis. FAA and Massport believe that these baseline assumptions, used throughout the 37.5M High RJ analysis, represent reasonable and conservative assumptions for planning purposes. Peak Period Pricing and Runway 14/32 are designed to address different causes of delay. Peak Period Pricing would target delays that result from airline overscheduling, while Runway 14/32 is designed to prevent delays that occur during northwest winds. Massport has committed in the Section 61 Findings to implementation of a demand management program, with a monitoring program that would be identify when overscheduling conditions exist. Since the 37.5M High RJ scenario represents an overscheduling situation that would likely trigger any monitoring program, the correct comparison is between Alternatives 1 and 2, not 1A and 2. While Peak Period Pricing alone would have benefits comparable to Runway 14/32 alone (under the extremely pessimistic Low Case RJ sensitivity analysis assumptions), the combination of both Peak Period Pricing and Runway 14/32 (Alternative 1) would reduce annual delay hours by an additional 85,000 annual delay hours compared to Peak Period Pricing alone.

Community Advisory Committee Anastasia S. Lyman

Code	Topic 1	Topic 2	Comment	Response
18.208	Delay	Modeling	Massport also states that delay associated with northwest winds would be eliminated (page 6-209) where page 4-76 states that the proposed runway would reduce VFR northwest wind delays by 65%. Strong northwest winds only occur on average 10 days per year.	The two statements refer to different conditions. Under 1998 conditions, the Preferred Alternative reduces VFR northwest wind delays by nearly 90 percent, virtually eliminating these delays (see Section 4.6.1 of the Supplemental DEIS/FEIR). Under the long-term 37.5M High RJ scenario, VFR northwest wind delays are reduced by 65 percent. For comparison purposes, under the near-term 29M RJ scenario, the Preferred Alternative reduces northwest wind delays by nearly 70 percent.
18.209	Alternatives	Demand Management	Massport has indicated that the preferred alternative is consistent with long-term goal of improving the efficiency and reliability of airside operations at Logan, however, they have documented that a peak period pricing scenario as proposed in the EIS/Supplemental DEIS/FEIR is ineffective for the case scenario with high regional jets. This is a highly likely scenario, as has been demonstrated through fleet acquisition of airlines serving Logan. Thus, the preferred scenario does not provide adequate and effective demand management techniques to assess this alternative for high regional jets.	Section 4.7.2 of the Supplemental DEIS/FEIR demonstrated that peak period pricing would be effective in a high regional jet scenario, reducing runway-related delays by approximately 18 percent. While the analysis demonstrates that a $150 flat fee would have limited impact on regional jets, the detailed parameters for a Logan program that will effectively influence these aircraft will be specified at the time a demand management program is proposed for implementation. The FAA and DOT are currently examining the policy implications of demand management and intend to develop an array of public policy tools to focus on delay reduction, capacity management, and improved competition and efficiency. As part of this national effort, Logan has been selected as one of three airports to serve as a case study for U.S. airport demand management strategies. In its Section 61 Findings pursuant to the Massachusetts Environmental Policy Act, Massport committed to implementing an enforceable peak period pricing program, or an alternative demand management program with comparable effectiveness, for Logan Airport. The objective of this program will be to avoid or reduce delays associated with overscheduling of Logan Airport's available capacity in good weather conditions. The goal is to have a demand management program in place before overscheduling conditions occur at Logan Airport.
18.210	Capacity	Increased	We are of the opinion that the Airside Improvement Project increases average airfield capacity rather significantly, and therefore will tend to increase demand on landside facilities at Logan and on the access systems to the airport. We believe the increased presence of regional jets in the Logan fleet will substantially diminish the utility of the proposed runway, and therefore the ability of controllers to substantially alter the current and projected future runway utilization pattern. Therefore, both the projected reductions in delay and noise impacts are unlikely to be fully realized. Since we believe the analysis assumptions made for the Preferred Alternative are flawed, we must inquire as to the dependence of the improvements and replacements planned for terminals.	The Preferred Alternative of the Airside Improvements does not increase the airfield's normal capacity. See response to Comment 18.19. The runway use, delays and noise impacts have been examined for a range of future regional jet demands, and all show substantial benefit for the Preferred Alternative. Since the Airside Improvements Projects will not change the underlying passenger demand for travel at Logan, it is independent of and will have no effect on the need for terminal improvements. The Airside Projects and the terminal projects have independent utility. See response to Comment 18.195 regarding regional jets and the utility of Runway 14/32.

Code	Topic 1	Topic 2	Comment	Response
18.211	Ground Access	Ground Access Management Plan	Massport is required to attain a 35.2% passenger use of High Occupancy Vehicles. To date it has failed to do so, and there is no realistic program to improve the current percentage of HOV use in the light of projected passenger growth. It must therefore be assumed that passenger growth and VMT growth will be parallel, and that motor vehicle emissions will increase substantially.	While not related to this EIS or the FAA's mitigation commitments for the Airside Project, the airside passenger forecasts are consistent with Massport's comprehensive Ground Access Management Plan passenger forecast. One of the primary goals of Massport's Ground Access Management Plan is to increase annual air passenger HOV mode share to 35.2 percent by the time Logan Airport reaches 37.5 million passengers. Other goals of the GAMP are to: a) increase the overall efficiency of the metropolitan transportation system through interagency coordination; b) reduce employee reliance on commuting alone by private automobile; c) provide adequate long-term parking within the limits of the Logan Airport Parking Freeze; and d) improve management of ground access and infrastructure through technology. Key achievements in reaching those goals include: 1) Establishment of the Logan Airport Transportation Management Association (TMA). Massport provided subsidies for TMA members on Logan Express and MBTA. TMA members ride the Rowe's Wharf Water Shuttle for free. Massport hired professional TMA firm to operate the Logan Airport TMA. 2) Massport's Logan Express bus service achieved record ridership of more than one million passengers in 1998 and 1999. Massport recently announced that a fourth Logan Express facility will be established in Peabody, MA. 3) Construction of the Woburn Regional Transportation Center which includes 900 new parking spaces for Logan Express was completed in 2000. 4) Planning continues for the Airport Intermodal Transit Connector which will provide a direct link between Logan Airport and South Station/Red Line. 5) Massport initiated the Logan DART bus service between Logan Airport and South Station in November 2000. 6) Massport continues to coordinate with the MBTA in planning for the redesigned new Airport Station to include wide escalators, flight information monitors, and other air passenger amenities. 7) Massport continues to operate free shuttle buses between Airport Station, the Water Shuttle dock, and the passenger terminals. 8) Massport implemented Logan Direct service from the South Shore. 9) Massport markets and advertises HOV services through use of the 1-800-23LOGAN telephone service and other media. 10) Massport continues to implement the commercial vehicle lane, Neptune Road exit ramp peak period forced turnaround, local street closures, and traffic volume restrictions at Maverick Street. 11) Continued traffic monitoring, curbside monitoring, and traffic control improvements.

Code	Topic 1	Topic 2	Comment	Response
				12) Continued development effort for Advanced Traveler Information Systems and Automatic Vehicle Identification (AVI) to monitor commercial vehicle activity. Refer to the Logan Airport 1999 ESPR which further describes Massport's Ground Access Management Plan. The Logan Airport 1999 ESPR and subsequent EDRs provide annual reports on the status of Massport's Ground Access Management Plan. The ESPR and former GEIR/Annual Updates are specifically incorporated by reference in the Airside Project EIS Documents as background information.
18.212	Cumulative	Airport vs. Project	The capacities of the airside and landside systems must match. It has not been established that the systems of ground access to Logan will be adequate to handle 37.5 million passengers within the constraints of air quality and congestion standards. The terminal capacities, existing and planned, have not been evaluated in this document against industry standards for space, movement and services to passengers. The airside is demonstrably congested, and the Airside Improvement Project will not eliminate that. Therefore we regard as unsubstantiated the assertion that there is no interrelationship and that the landside facilities can support the airside movements, and do not support the assertion that the Airside Improvement Project has "independent utility".	The purpose of the Airside Project is to reduce current and projected levels of airfield congestion and delay and to enhance the safety of aircraft operations at Logan. Massport's ongoing landside improvements planning process is designed to enhance the efficiency of passenger processing, include terminal modernization, as well as roadway, parking and service area improvements. The landside projects will not affect the design or implementation of the Airside Project, which has independent utility, nor will the Airside Project improvements affect the design or implementation of any of the landside projects. Furthermore, the ground access implications of a future passenger level of 37.5 million was explicitly analyzed in the 1994/95 GEIR. All airside and landside projects, where required, will continue to be the subject of separate comprehensive environmental analysis by project proponents in accordance with federal and state regulations. As expressed in the May 7, 1999 EOEA Certificate, Massport's Environmental Planning and Status Report (ESPR, formerly GEIR) process provides "a big picture cumulative impact analysis of Logan operations, impacts and mitigation. It complements the project-specific EIRs," such as this one for the Airside Improvements, "helps to focus the review process of individual EIRs, and ensures that segmented project review does not occur in the context of MEPA review at Logan Airport."
18.213	Cumulative	Cargo Buildings	...it is clear from this Chapter that Massport is finding it difficult to replicate cargo handling facilities already displaced or being displaced by projects other than the Airside Improvement Project. That project will eliminate additional cargo-handling infrastructure. Massport has not taken into account the trends in air cargo growth nor the implications for "belly cargo" capacity of an increasing percentage of regional jets in the carrier jet fleet, which indicate the need both for additional cargo-handling ground capacity and a greater number of cargo flight operations. By eliminating cargo buildings, Massport "irretrievably commits resources to future projects".	The tenants of Building 60 are primarily involved in the business of consolidating and forwarding of freight and can relocate to available off-airport warehouse/industrial space in various communities around Logan. They do not need to be located on or adjacent to the airport. Relocation assistance will be provided to all eligible tenants in accordance with applicable provisions of the "Uniform Relocation Assistance and Real Property Acquisition Act of 1970", as amended and Part 24 of 49 CFR, as well as MGL Chapter 79A and implementing regulations. The final choice of the relocation site will be up to each individual, eligible tenant. See also response to comments 18.113 and 18.114.
18.214	Ground Access	Ground Access Management Plan	Much more than the AITC will be needed to attain the requirements both regulatory and practical for enhanced HOV utilization.	Refer to response to Comment 18.211.
18.215	Ground Access	Terminal Capacity	Terminal upgrades and replacements should demonstrate attainment of industry standards for passenger management-unit space requirements and other parameters.	The Preferred Alternative of the Airside Improvements does not increase the airfield's maximum capacity which ultimately limits the scheduling of airline services. The runway use, delays and noise impacts have been examined for a range of future demand levels, and all show substantial benefit for the Preferred Alternative. Nevertheless, the need for ongoing and future improvements to the terminals is a separate issue, which is not dependent on the outcome of the Airside Improvements, since the Improvements Projects will not change the underlying passenger demand for travel at Logan.

Community Advisory Committee Anastasia S. Lyman

Code	Topic 1	Topic 2	Comment	Response
18.216	Cumulative	Land Use	The opposition of CAC members, appointed by their community governing bodies, to the Airside Improvement Project should be adequate demonstration that the project is not "consistent with local land use plans" and will "result in the division or disruption of established communities". Further, as the Airside Improvement Projects intends additional departures from RW 27 and the FAA and Massport have raised strenuous and serious objection to the South Boston Seaport development proposals, it is beyond argument that the project is not "consistent with local land use plans".	The proposed airside improvements are located on the airport, which is within the Logan International Airport Subdistrict (LIA) of the East Boston Neighborhood District Zoning (Article 53). While Massport is not subject to local zoning regulation in the performance of its essential governmental functions at Logan Airport, the proposed airside improvements are nonetheless consistent with the stated purpose of the subdistrict, which is "to accommodate those uses necessary to the operation of an international airport ...". The proposed runway and taxiway construction is located on airport property and therefore will not result in the physical disruption or division of communities. The arrival and departure paths for aircraft using Runway 14/32 will be over Boston Harbor. Therefore there will be no conflict with future development along the South Boston waterfront as a result of the construction of unidirectional Runway 14/32. The 65 db DNL noise contour that extends over the South Boston waterfront is associated with departures on Runway 27, and is present under the No Action Alternative.
18.217	Mitigation	Sound Insulation	The noise impacts of Logan will continue to grow. While acoustic treatment of noise-impacted residences is desirable and essential, it is not full mitigation for noise impacts. Further, Massport declines to expand its program beyond that authorized and supported by Federal grants.	Massport, in careful coordination with the FAA, has developed a broad noise mitigation program for Logan Airport. In addition to one of the most extensive residential and school soundproofing programs in the nation, the program includes many other elements such as restrictions on runway use designed to minimize noise impacts, flight tracks designed to optimize over-water operations (especially during nighttime hours), a computerized Noise Monitoring System, a Noise Complaint Line, and a Preferential Runway Advisory System (PRAS). The sound insulation mitigation program will include all residences newly included in the 65 dB DNL contour as a result of the Preferred Alternative. Logan Airport has one of the most comprehensive and progressive sound insulation programs of any airport in the country. It was initiated in 1980 before any airport began receiving federal funding to sound insulate homes under FAR Part 150. It is the only program in the country to offer residents extra sound insulation treatment in a "room of preference" chosen by the homeowner and it is the only program in the country that received FAA approval to expand the area of eligibility by accounting for hill effects. In addition, as of the 1999/2000 construction season, FAA grants covering 80 percent of the cost of sound insulation (paid for by airline ticket taxes), combined with funds provided by Massport, fully funded the sound insulation of all eligible dwelling units in Massport's current sound insulation program. Over the last 15 years, the FAA and Massport have spent over $100 million on sound insulation in the communities surrounding Logan. The FAA will fund the federal share of sound insulation grants for homes falling within the 65 dB DNL contour as a result of the Preferred Alternative. The FAA acknowledges that Massport has committed in its Section 61 Findings to provide any additional funds that may be necessary to complete the sound insulation of homes newly included in the 65dB DNL as a result of the implementation of the Preferred Alternative. See Appendix B of the Final EIS for Massport's Section 61 Findings. In addition, building code upgrades required to allow such homes to qualify under the sound insulation program will be paid for by the FAA and/or Massport. See Section 4.1 of the Final EIS.
18.218	Air Quality	NOx	It is important to point out the problem of emissions of nitrogen oxides of which Logan is a major source, in response to the claims concerning air quality. While the recent Massport commitment to keep future NOx levels for ground transportation at current 2001 thresholds is appreciated, the concerns of the community also addresses future NOx levels based on increased aircraft operations at Logan.	The Airside Project and other reasonably foreseeable airport projects will result in a reduction in NOx pollutants compared to the alternative No Action scenarios. The Logan Air Quality Initiative (AQI), unrelated to the Airside Project, was approved by EOEA in March 2001. The primary goal of this program is to retain NOx emissions associated with the airport at, or below, 1999 levels. The progress of this initiative will be reported on annually in the ESPR.

Community Advisory Committee Anastasia S. Lyman

Code	Topic 1	Topic 2	Comment	Response
18.219	Mitigation	Commitments	A more expansive list of mitigation measures to address community concerns regarding the Airside Improvement Project and demand management at Logan must be developed and presented in the Supplemental DEIS/FEIR. The mitigation presented is insufficient to document the FAA's and Massport's intent to address the long-term capacity situation at Logan.	FAA policy requires mitigation that is specific to environmental impacts caused by the project. The comprehensive Mitigation Program to be implemented by Massport and FAA as discussed in the Supplemental DEIS and Final EIS is appropriate for the Airside Project. In addition, Massport and/or the FAA have proposed a number of environmentally beneficial actions to reduce the impact of Logan Airport operations on surrounding communities. See Section 4.2 and Appendix B of the Final EIS.
18.220	Alternatives	Safety Benefits	Detail how the airside improvement projects enhance operational safety... . Are you inferring the current operations at Logan are unsafe? The recommended layout asks for a deviation to FAA standards, which appears to be the opposite of enhancing operational safety!	While operations at Logan are conducted safely, elements of the Preferred Alternative would increase the efficiency and enhance the safe operation of Logan's runway and taxiway system while reducing airfield congestion and providing certain environmental benefits. The proposed taxiway improvements will enhance safety by simplifying Logan's complex taxiway layout, minimizing the opportunity for pilot confusion and allowing a more orderly flow of ground traffic. The impetus for the taxiway improvement concepts was the 1993 report "Runway Incursion Mitigation Plan, Taxiway Relocation Study." The primary purpose of reducing the approach minimums on Runways 22L, 27, 15R, and 33L is to enhance safety by providing aircraft with positive instrument guidance at low altitudes, by allowing aircraft to use runways more aligned with the wind during low visibility conditions, and by reducing the probability of missed approaches. The proposed reduced minimums at Logan Airport would be consistent with recommended practices as established in FAA Order 8260.3B, United States Standards for Terminal Instrument Procedures. These standards apply at all airports in the United States and are already used for Runway 4R approaches at Logan Airport. Refer to Section 3.6, Safety Benefits of the Taxiway Improvements and Reduced Minimums, of this Final EIS. Construction of the Runway 32 end Runway Safety Area without the two small corner areas that lie over water will not compromise safety. Based on an analysis of available statistical data of aircraft accidents/incidents, reported undershoots under conditions for which Runway 14/32 would be operated, have been on the centerline and within 1,000 feet of the Runway. The proposed Runway 32 RSA is a full 1,000 feet long on the centerline and therefore, would provide an acceptable level of safety. Refer to Section 3.2 of the Supplemental DEIS/FEIR and Section 3.2.2.4 of the Draft EIS/EIR.
18.221	Alternatives	Cost-Benefit	Address the cost associated with each of the alternatives and why the build alternative was selected.	The Preferred Alternative was selected because it produced significant delay reduction and environmental benefits. The economic and service costs associated with Peak Period Pricing were described in Appendices F & G of the Draft EIS/EIR. Massport is moving forward with peak period pricing or alternative demand management program. Construction costs were not factored into the selection of the Preferred Alternative. Environmental benefits include reductions in air quality emissions and in noise exposure.
18.222	Alternatives	PPP vs. 14/32	...the SDEIS/FEIS does not demonstrate that Alternative 1A should be the preferred alternative. Using the low use case of regional jets (only DRJs) under the 37.5M High RJ Fleet, the delay savings for Alternative 1A is almost equivalent (less than 3% difference in delay savings) to Alternative 2.	See Response to Comment 18.207.

Community Advisory Committee Anastasia S. Lyman

Code	Topic 1	Topic 2	Comment	Response
18.223	Standards	EIS Standards	FAA and the State of Massachusetts should reject the SDEIS/FEIS because it does not represent the operational and environmental impacts of the alternatives due to misrepresentations of the forecasts for regional jets and cargo operations.	The Airside Project EIS/EIR documents respond to federal and state scoping directives and applicable FAA environmental orders and all other NEPA and MEPA requirements. The analyses in these documents and various public comments provide appropriate analytical context for assessing the project under federal and state environmental laws. The Secretary of Environmental Affairs found that the Final Environmental Impact Report (FEIR) submitted on this project adequately and properly complies with the Massachusetts Environmental Policy Act. FAA determinations on this Final EIS will be reflected in the Federal Record of Decision (ROD). Refer to responses to Comments 18.111 and 18.112 regarding forecasts of regional jets and responses to Comments 18.113 and 18.114 regarding forecast cargo operations.
18.224	Runway 14/32	Runway Use	Massport should be required to specifically document which aircraft will be able to use the proposed runway and what % of delay savings is worth the estimated $33 million + $10 million planning and engineering costs.	Unidirectional Runway 14/32 would be principally used by commuter aircraft (regional jets and turboprops). Regional jet aircraft are capable of landing or taking off 5,000 feet and are expected to use the new runway in large measure. See responses to Comments 18.67 and 18.195, Appendix C of the Supplemental DEIS/FEIR, and Section 3.3 of this Final EIS. Also, Appendix D of this Final EIS contains the fleet mix for each forecast scenario as well as the takeoff and landing distance assumptions. Finally, the delay reduction benefits of the new runway are demonstrated in Sections 4.6 and 4.7 of the Supplemental DEIS/FEIR, and in Section 3.3 of this Final EIS.
18.225	Alternatives	Construction Costs	5. Table 8.4-1, in what year are these costs based? 6. Massport should reflect the costs for planning, environmental and engineering so that total program costs (not just construction costs) are reflected. 7. Table 8.4-1, does not include replacement cargo buildings and parking spaces that will need to be replaced due to the project 8. Table 8.4-1, does the runway cost include lighting and navigational aids?	The construction costs for the airside project elements presented in Table 8.4-1 are based on year 2000 dollars, but have been updated in Table 2.3-2 of this Final EIS. In addition to the costs presented in the table, approximately $9 million was spent for planning, environmental analysis, and permitting. Relocation costs for eligible tenants of Cargo Building 60 will be negotiated with each tenant. The tenants of Cargo Building 60 are primarily involved in the business of consolidating and forwarding of freight and can relocate to available off-airport warehouse/industrial space in various communities around Logan. They do not need to be located on or adjacent to the airport. Relocation assistance will be provided to all eligible tenants in accordance with applicable provisions of the “Uniform Relocation Assistance and Real Property Acquisition Act of 1970", as amended and Part 24 of 49 CFR, as well as MGL Chapter 79A and implementing regulations. The final choice of the relocation site will be up to each individual, eligible tenant. The runway cost includes lighting and navigational aids.
18.226	Alternatives	Safety Benefits	Delete references of project enhancing safety since no specific safety justification has been developed in the SDEIR/FEIR.	In addition to the improvements that are designed to relieve airside delays, the taxiway improvements would generally reduce the potential for runway incursions and by enhancing the current taxiway, would enhance safety by decreasing congestion on the taxiway system, and would provide controllers with greater flexibility to improve the efficiency of ground operations. Although the total number of crossing aircraft would not change, the Centerfield Taxiway would reduce the number of separate crossing events. Realignment of Taxiway November and reconfiguring the Southwest Corner taxiways would provide more direct and less confusing taxi routes for aircraft, particularly at night or in bad weather. Extending Taxiway Delta would provide separate taxi paths for departures on Runways 27 and 33L. Reducing the approach minimums on Runways 15R, 22L, 27 and 33L would promote safety by providing positive instrument flight at low altitudes below existing minimums, allowing aircraft to use runways more aligned with the wind during low visibility conditions, and by reducing the probability of missed approaches. Refer to Section 3.3 of the Supplemental DEIS/FEIR and Section 3.6 of this Final EIS for additional information on safety benefits of the Preferred Alternative. See also Response to Comment 18.220.

Community Advisory Committee Anastasia S. Lyman

Code	Topic 1	Topic 2	Comment	Response
18.227	Noise	Noise Rules	Revise the outdated Logan Noise Rule, with full community participation. Include elimination of hush-kitted AC from nighttime operations, and incorporate a ceiling on total nighttime operations.	No airport is permitted to implement or revise a mandatory noise or access limit on Part 36 Stage 3 aircraft (whether they are hushkitted or not) without following the procedures of FAR Part 161. That process, if Massport chose to initiate it, requires public participation, not just by communities but by affected aircraft operators as well. However, the FAA's Part 161 process is a difficult process for airports to undertake because of the demanding legal requirements that must be satisfied to obtain approval for such access restrictions. Only measures of a totally voluntary nature and that have no penalty associated with them are excluded from Part 161 requirements. Massport currently employs such voluntary measures.
18.228	Noise	Schools	Extend the sound mitigation program to include schools, hospitals, residences and other sensitive uses to include the 60 DNL contour.	There are no schools, hospitals, or residences within the 60 dB DNL contour that are adversely affected by the Preferred Alternative. Construction of Runway 14/32 will include residential sound insulation treatments of adversely affected homes within the 65 dB DNL contour.
18.229	PRAS	Goals	Include an EIS re-analysis of PRAS goals as part of the mitigation effort, not just in the monitoring and reporting.	The PRAS goals were established after community input in the 1980s. The objective of PRAS was to distribute noise equitably, based on demographic considerations. As demonstrated in the Supplemental DEIS/FEIR, there have been no significant demographic changes since the PRAS goals were set. Moreover, the Draft EIS/EIR and Supplemental DEIS/FEIR also demonstrate that Runway 14/32 enables controllers to achieve a far more equitable balance of noise impacts among communities surrounding Logan Airport than occurs today and would occur in the future if no action is taken. Nevertheless, the Massport Board has resolved in the Airside Project Section 61 Findings set forth in Appendix B, to begin working with the CAC to update the PRAS program, with the understanding that the current PRAS system will remain in place until superseded. Refer to Section 4.2.1 of this Final EIS.
18.230	Alternatives	Demand Management	Begin administrative and regulatory process for establishing a demand management system and regulations at this time, with peak period pricing, flat pricing, and slot auctions systems all considered for adoption, and establish triggers for when the system is to be implemented. The goal of the "trigger level" should be the elimination of delay.	Setting a trigger with the goal of "elimination of delay" is unreasonable, delay could only be completely eliminated if all flights were eliminated. Avoiding or reducing delays due to airline overscheduling is a more appropriate target. In its Section 61 Findings pursuant to the Massachusetts Environmental Policy Act, Massport committed to initiating the rule-making process to implement an enforceable peak period pricing program, or an alternative demand management program with comparable effectiveness, for Logan Airport. The objective of this program will be to avoid or reduce delays associated with overscheduling of Logan Airport's available capacity in good weather conditions. The goal is to have a demand management program in place before overscheduling conditions occur at Logan Airport. The FAA acknowledges that Logan Airport is one of the nation's most delayed airports and that Massport has committed to and will propose to implement a demand management program to reduce overscheduling delays. The FAA expects that any such program that is proposed for implementation will be consistent with applicable Federal law. The FAA is currently working with the U.S. DOT to establish national guidelines for demand management programs at U.S. airports. As part of this national effort, Logan has been selected as one of three airports to serve as a case study for U.S. airport demand management strategies.
18.231	Alternatives	Part 161	Begin a FAR Part 161 Process that addresses all of the above recommendations including restrictions on use of hush-kitted aircraft at Logan, on night activity, and demand management systems.	Compliance with the FAR Part 161 process has proven difficult for airports because of the demanding legal requirements that must be satisfied for approval of mandatory access restrictions. The Part 161 process also requires that all reasonable alternatives to mandatory access restrictions be implemented first. To date, no airport has been able to obtain approval for Part 161 mandatory access restrictions. Therefore, Massport has not proposed any formal changes to its noise abatement regulations that would require a Part 161 process. However, Massport continues to pursue

Community Advisory Committee Anastasia S. Lyman

Code	Topic 1	Topic 2	Comment	Response
				alternatives. For example, Massport has actively encouraged Logan's major airlines to replace hushkitted aircraft with newer and quieter Stage 3 equipment. In the past year, both Delta and USAirways have replaced hushkitted jets on their heavily flown New York and Washington shuttle routes from Logan. See also the response to Comment 18.230 regarding Massport's commitment to demand management.
18.232	Alternatives	Cost-Benefit	Advise if FAA requires a Benefit/Cost Analysis for this project. If so, Massport should provide this information as part of the DEIS/FEIR.	The Airside Project Draft EIS/EIR and the Supplemental DEIS/FEIR documents comply with all applicable NEPA requirements and provide appropriate analytical context for assessing alternatives. A cost-benefit analysis is not required as part of the EIS. According to 40 CFR Part 1502 Environmental Impact Statements Regarding Cost-Benefit analysis " for purposes of complying with the act, the weighing of the merit and drawbacks of the various alternatives need not be displayed in a monetary cost-benefit analysis…"
18.233	Public Participation	SDEIS Scope	The CAC requested additional analysis from FAA and Massport as part of the SDEIS panel process. Please address why this requested information was not included in the Supplemental DEIS/FEIR.	FAA considered this request as part of the Supplemental DEIS Panel process and developed a Scope of additional work to address the Panel's concerns. FAA notes that the information and analysis requested by CAC has been addressed in previous responses to comments.

Letter 19

Comments on Massport Logan Expansion Project

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John Silva, FAA

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The review of Massports DEIR/S on the proposed Runway 14-32, Center Field Taxiway and change in decision heights attracted a substantial negative response, particularly in the surrounding communities. In response to this high concern, Secretary Durand in his May, 1999 certificate identified a series of specific items which required further analysis and mitigation in the final EIR/S. FAA Administrator Garvey required the preparation of a supplementary Draft EIS, and called for an "impeccable process", with a special panel appointed by Mayor Menino and Governor Cellucci to guide the additional work. The resulting report is a major disappointment. Most of the requirements of Secretary Durand's May certificate have been ignored, and much of the additional analysis requested by mayoral panelists, the Citizens Advisory Committee, AIR Inc, CARE and EPA Region I have been ignored. There is still an opportunity to correct these inadequacies in a revised Final EIR/EIS, which could be prepared as a unified document, but the deficiencies are so great that another period of public comment on an improved document should be provided. 19.1

In general, the Massport document mischaracterizes the conclusions of its own analysis, understating the noise and air pollution caused by the proposed runway and taxiway, and ignoring the safety concerns raised by the adjacent community regarding

the proposed taxiway and lowering of decision heights. It understates the significance of peak pricing of landing fees, and ignores the need for stronger landing fee and regulatory mechanisms to encourage use of larger aircraft less frequently to handle growing passenger demand within the feasible capacity of the airfield, and to improve public transportation to accommodate increased passengers to Logan within the capacity of the ground access system.

In large scale terms, Logan needs to handle approximately 30% to 50% more passengers within the next 10 to 15 years, on a runway configuration which is already congested and beyond capacity. This can only happened if effective ways are developed to increase the average number of passengers per plane by about 50%, but the experience has been that the number of passengers per plane has not been increasing at Logan, but possibly actually shrinking because of the entrance of small regional jets replacing large jets. The proposed short runway 14-32 is not long enough to handle the emerging regional jets, so it expands capacity somewhat, and increases noise impacts dramatically, by shifting runway utilization patterns causing more than triple the over flight in sensitive neighborhoods such as East Boston, Chelsea, Everett, Somerville, Cambridge, Roslindale, Brookline, Roxbury, South End and South Boston. The major worsening of noise is inconsistent with the planned South Boston Waterfront District. But the Logan Expansion Package is totally inadequate to the challenge of passenger increases of 30% to 50%. Every scenario tested in the Massport document shows delay increasing from today's unacceptable levels, and (if noise were properly measured against a year 2000 base case) noise and air pollution increasing. This, and the ongoing problems of LaGuardia should serve as a "wake up call" for the need for immediate implementation of peak pricing, development of more powerful means of increasing aircraft size, and in particular increasing aircraft size and decreasing

19.2

frequency of use in the commuter services and general aviation which now use 40% to 45% of Logan runway capacity for less than 10% of the passengers in very small planes, the need for new noise abatement measures to contain the threatened increased noise, and the need for new public transportation access and the mitigation of threatened growth in air pollution. Massport's obsession with the ineffective but destructive short runway 14-32 has distracted attention from peak pricing and other measures to reduce overscheduling for almost a decade, and threatens the region with an inadequate game plan to prepare for the next decade. This massive deficiency needs to be corrected in the next phase of this process, and it will require that Secretary Durand and Administrator Garvey have the courage to "tell the king he has no clothes" and insist on full answers to the issues of the May 1999 certificate, and the "impeccable process" promised by Administrator Garvey.

A) Inconsistency of Massport's document with the requirements of the EOEA May 1999 Certificate

The Massport document, presented as a Final EIR does not adequately deal with the requirements of the certificate of Secretary Durand dated May 7, 1999, to be accepted as a Final EIR, nor does it adequately deal with a number of new developments to provide an adequate basis to consider alternatives, consider mitigation options, or make reasonable decisions. In the federal process, Massport will be required in any case to prepare a Final EIS, based on the comments of this process, so there is adequate time for Massport to deal with the serious deficiencies in the current document, and prepare a Final EIR as a unified document with the FEIS required in any case by the federal NEPA process.

Based on the deficiencies in this report, and new information, I urge Secretary Durand to issue an update on his May 7, 1999 certificate to guide the preparation of the final EIS/R. The primary areas I urge Secretary Durand and Administrator Garvey to include in a revised certificate and deal with in a revised Final EIS/R, are the following:

1) Revision of the flawed 1993 base year for projection of the delay, noise and air quality impacts.

2) Requirement to secure FAA approval of peak pricing as soon as real benefits are available.

3) Tightly crafted exemption for economic hardship.

4) Identify any obstacles to relocating a substantial part of 30,000 FA operations to Hanscom and other regional airports.

5) Noise impacts measurement.

6) Initiation of federal part 161 process to eliminate hush-kitted aircraft from Logan, reduce night time noise, and expand over water utilization at night.

7) Review of effectiveness of PRAS.

8) Section 61 commitment to reduce noise.

9) Sound-proofing commitments, and Section 61.

10) Park and open space impacts.

11) Unidirectional nature of proposed runway 14-32.

12) Ground access, parking freeze, Blue Line Station improvements and other actions to mitigate expansion.

13) Air quality initiative.

14) Lack of consideration of alternatives to center field taxiway.

15) Rare species.

16) Environmental Justice.

17) Cumulative impacts with instrumentation and changes in landing decision heights.

18) Wind restricted runway.

19) Impact of relocation of cargo facilities to vicinity of Bremen Street, caused by Runway 14-32.

20) Expansion, regional context, sensitivity analysis.

21) EPA Region 1 and CAC issues.

B) Brief Discussion of Deficiencies

1. Revision of the flawed 1993 base year for projection of delay, noise, and air quality impacts was required by the Secretary's certificate, but was not adequately performed. This results in a substantially flawed analysis of delay, noise, air quality, and Environmental Justice issues.

A) The analysis by the CAC consultants shows that the penetration of regional jets into the Logan market today is 16 to 19%, but the "29 million low" scenario of the document, portrayed as representing conditions in 2003 to 2005 includes 3% regional jets, low by an order of magnitude. But regional jets, based on the CAC consultants' analysis are unlikely to be able to use the proposed 5000' runway in significant numbers. Massport has predicted a large proportion of regional sets will use a 5000' runway, while the CAC analysis shows that "Canadairs" and "Embriers" are dominating the regional jet fleet, with Dorniers constituting approximately 10%. The Appendix of the Massport document includes an analysis by FAA consultant Muldoon that states flatly that the

19.3

Canadair can not use the 5000′ runway at all, that Embriers can not during wet weather, and Dorniers can use a 5000′ runway in both wet and dry conditions. It further states that regional jets are not using available 5000′ runways in Baltimore and Philadelphia.

It appears certain from this information that the "29 million low" scenario which is the basis of much of the analysis in the report, the 37.5 million low, and 37.5 million high all substantially over state the proportion of the fleet that will be able to use a 5000′ runway, and thus substantially over state the delay reduction it would provide, so almost all of the predictions of delay are inaccurate, and the noise and air pollution predictions which rely on the runway ut8ilization and delay analysis are not reliable. This major inaccuracy was avoidable, if Massport had complied with the certificate of Secretary Durand of May 1999. (In addition, EPA region 1 had requested that actual year 2000 data be the basis of analysis in their letter of November 6, 2000.) Based on the fact that regional jets are likely to replace most non-jets, the nature of the regional jet fleet, and the FAA (Muldoon) Report on the unlikeliness that most regional jets use a 5000′ runway, it appears that the proposed runway is far less effective than peak pricing at reducing delay, so the policy consequences of the flawed base year is major. The Secretary's certificate of May 1999 also called for sensitivity analysis which was not performed. This might have shed some light on the question of whether regional jets are displacing turbo props or large jets. If turbo props are displaced by regional jets, the number of aircraft movements is decreased, because RJs are larger than turbo props. Thus, even if turbo props are replaced by Dorniers which could use a 5000′ runway, the delay reduction

would be much smaller than Massport predicts. On the other hand if the regional jets are displacing large jets, the result is increased operations and delay and if some non-jet operations continue, a 5000' runway might provide some delay reduction, lower than predicted by Massport but higher than zero. (The high RJ scenario seems most likely and Massport states that it assumes replacement of most turbo props by regional jets). Because of the likely inability of most regional jets to land on a 5000' runway, it appears that Runway 14-32 may fail to significantly reduce the northwest wind delays that are the primary justification to build it. In short, the Secretary and Administrator should require further development of an accurate year 2000 base case and sensitivity analysis to be included in a revised Final EIR, and used as the basis of analysis.

2. The requirement that Massport develop a peak pricing plan and secure FAA approval as soon as it produces real benefits, was not complied with. The document fails to analyze a variety of price options as required by the Secretary, and fails to fully develop a "tightly crafted" economic exemption to get peak pricing "action ready". Additionally, the analysis of the CAC consultants shows that the trigger for peak pricing should be between 90 and 100 movements per hour but Massport does not analyze this. The work done by the CAC consultants and the work by Massport shows that the need for peak pricing is immediate. The emerging regional jet scenario substantially reduces the delay reduction potential of the 5000' runway, at the same time it increases the danger of substantial growing delay. The analysis of economic impact shows that the economic impact of immediate implementation of peak pricing is low, but that the economic impact of late implementation is high. Moreover, the CAC consultants have identified a disturbing pattern of aircraft schedules shifting into the

early morning or night to avoid congestion, worsening noise. Peak pricing would encourage the smaller less noisy aircraft to shift out of the peak rather than the large aircraft, reducing early morning and evening noise. Additionally, it is likely that given the movement toward regional jets now occurring at Logan, peak pricing can encourage the conversion of commuter services to regional jets, and the displacement of some activity to direct regional jet services from other New England airports, (both phenomena that the Secretary required Massport to analyze, which Massport failed to do). The Massport document continues to indicate that over 40% of Logan runway use is for commuter non-jet services in small (19 seat) planes accommodating less than 10% of Logan passengers. Encouraging the conversion and consolidation of commuter services to regional jets is the single most effective action to reduce delay at Logan, and should occur immediately. 19.4

But the document does not carry out the analysis of potential for changes in regional carrier fleet mix in response to peak period pricing, as required in the May 1999 certificate. The paragraphs on pp. 4-46 and 4-47 state "Fleet mix changes were not explicitly modeled ..." but the fleet mix is the heart of the matter. Logan today is handling 479,000 aircraft movements per year, down from previous peaks of 507,000 in 1999, and 493,000 in a1993, years characterized by high delays. Table 4.3-2 projects 510,000 aircraft operations in the 29 million passenger low scenario, and a range of 543,000 to 608,000 operators to handle 37.5 million passengers. If delays, noise, and air pollution are unacceptably high at 479,000 operations, all of these projections indicate substantially worse situations, and the challenge is to adopt a significant runway landing fee flat or peak-pricing plan (with exceptions for economic hardship) to encourage consolidation of the 197,000 regional non-jet operations projected in Table 4.3-3 for the 29M low scenario to at most 166,000, in order to at least not worsen the 19.5

Year 2000 delays. With aggressive use of runway pricing, it should be the goal to consolidate the 197,000 regional non-jet services to 40,000 non-jet operations (in the exempted markets) and 70,000 to 90,000 regional jet operations, and encourage a reduction in the 25,000 general aviation operations predicted. With an immediate aggressive peak pricing program, including economic hardship exemptions, the goal should be to accommodate 29 million passengers with 430,000 aircraft operations, allowing relief from current levels of delay, better implementation of PRAS, and less noise. The longer-range challenge, which requires planning now, is to restrain the displacement of large jets by larger numbers of small regional jets, which threatens unacceptable levels of delay and noise. The range of 543,000 to 608,000 operations to serve 37.5 million passengers threatens unprecedented levels of delay and noise, far worse than experienced today at 479,000 operations. This second challenge will not be manageable with landing fee strategies alone, as the Massport analysis shows, and probably requires the use of Massport powers as proprietor over terminals to prioritize use of scarce gates to larger aircraft. Planning for this second long-range challenge should begin now, but immediate action is required on peak pricing to avoid worsening of delay and noise.

The Secretary and Administrator should require the preparation of a more aggressive peak pricing plan for Logan as part of a revised Final EIR. The fact that FAA is reportedly about to release an option paper on LaGuardia too late for inclusion in this comment period is unfortunate, but Secretary Durand and Administrator Garvey could require an opportunity for further public comment on the applicability of the LaGuardia options to be adapted for the Logan situation.

3) Requirement for a "tightly crafted" economic hardship exemption is partially complied with, and the analysis clearly shows that implementation of peak pricing now has little economic impact, but if it is delayed, the economic disruption will be higher. The report identifies that a further targeted exemption for small aircraft capable of using "BABY 15-33" (in markets for airports within 50 miles where very small aircraft may be required for economic viability) would be possible. Since this sub-market is the location of the most immediate potential for economic disruption, this exemption should take priority, and the other economic hardship exemption should be subject to periodic review of necessity, to encourage conversion and consolidation with regional jets. This area should be reviewed in the light of the emerging information on regional jets identified by the CAC consultants. Secretary Durand and the Administrator should require additional work on the "BABY 15-33" exemption, and the potential for the "essential service" exemption to be periodically reviewed to encourage conversion to regional jets. 19.6

4) Development of means to relocate all or part of the 30,000 annual GA operations out of Logan to Hanscom was supposed to be dealt with in the Massport FEIR, according to the May 7, 1999 certificate. This is not adequately dealt with in the Massport report. The Massport report was to identify any impediment to requiring the relocation but it is not dealt with. The "high RJ" scenario shows GA growing to 40,000 rips. This is a very high number, comparable in order of magnitude to 65,000 regional non-jet which might realistically use a 5000' runway (see Table 4.2-4), and over 7.6% of the predicted 585,000 operations of the high RJ scenario. 41,000 GA operations is almost exactly the difference between the 543,000 operations of the "37.5 M low" scenario, and the 585,000 of the high RJ scenario. (See Table 4.2-4) The Secretary and Administrator 19.7

should require that the revised final EIR/S analyze alternatives to achieve a substantial shift of general aviation activity away from Logan.

5) Noise impacts measurement is substantially distorted because of the errors of 19.8
the base case, which focuses on the 29M low scenario. If the 37M high RJ is in fact the more likely scenario, Figure 6.2-12 shows that the 65 decibel contour with the runway expands further into East Boston and Chelsea, and the South Boston Waterfront District, and shrinks back some over water, the opposite of Massport's rhetoric. However, these numbers contain other fundamental flaws. Massport ignored the request by EPA Region 1 to provide actual year 2000 data, which would identify the actual base case for noise, with an all stage III fleet, the most reduced noise foot print in 20 years as a result of successful past noise abatement strategies. A proper sensitivity analysis should show some incipient worsening of early morning and evening noise caused as congestion drives some jet operations into those hours, based on the CAC consultant report. Moreover, the noise analysis is flawed by assuming that PRAS will operate to shift operations, when the extreme congestion of the high RJ scenario is likely to not allow the tower to comply with PRAS, especially when the other two 3-runway configurations have at least 7000' of usable runway on all three runways, when 14-32 is only 5000' long, constraining its use. The noise impacts predictions should be revised to focus on the actual year 2000 noise and runway use characteristics, and the year 2000 (less noisy all stage III fleet) to give proper base cases, and noise predictions should focus on realistic high RJ scenarios. The Secretary and Administrator should require that the revised Final EIR/S should identify accurate base year and predicted noise values, without PRAS constraints.

6) The May 7, 1999 certificate required initiation of a Part 161 federal process to reduce noise, by eliminating "hush-kitted" aircraft, and proposed to reduce night noise by extending the midnight to 6 over water operation requirement to 10 p.m. to 7 a.m. The Massport document doesn't commit to initiate a Part 161. It also claims that the expansion of the night over water rule is unfeasible because it would cause congestion, but it neglected to explore the possibility of 15 minute "platooning" to achieve adequate capacity while requiring over water landings and takeoffs. For the 80% of relatively low wind conditions Secretary Durand's proposal should be feasible. The Secretary and Administrator should require that the final EIR include a Part 161 process to eliminate hush kits, provide 10 p.m. to 7 a.m. over water operation and discourage growth of large aircraft operations in the early morning and night, as part of the revised Final EIR/S. 19.9

7) The May 1999 certificate called for a review of the effectiveness of PRAS which the Massport document does not properly carry out. The document ignores the fact that the FAA tower ignores PRAS not out of ill will, but because of pressure of congested and delayed operations. With the most likely 37.5 Million high RJ scenario predicting substantially higher delay than today, it is unrealistic to expect the tower to be able to implement PRAS reasonably. In particular with the added information provided by the CAC consultants regarding the make up of the RJ fleet, and FAA consultant Muldoon's report on the likely refusal to utilize a 5000' runway by Canadairs and Embriairs, and the fact that the other two three runway configurations provide 3 runways of 7000' of more, it is not realistic to expect the tower to use the 14-32 configuration during low winds if congestion exists. Under these conditions, PRAS turns into a Frankenstein monster. In a literal (thoughtless, or perhaps cynical 19.10

application) less congested times of day and week become constantly characterized by use of the 27/32/33 combination, incessantly bombarding the affected communities whenever low winds and low congestion permit, which is to say at night and on weekends. In order to "comply with PRAS" and restrain the noise. This makes the noise predictions meaningless and not understandable. The Secretary and Administrator should require that noise exposure be reported without PRAS, to provide honest information in the revised Final EIR/S and require an open process to reconsider PRAS goals, and especially an understanding that the only way for PRAS to be meaningfully applied is through sufficient aircraft operation restraint relieving congestion adequately so that the FAA tower will be able to realistically and reasonably implement PRAS, without a cynical off-peak manipulation of night flights to mask the true noise impacts.

8) The Section 61 findings do not require commitments to reduce noise. The Secretary should require that the above noise abatement techniques, as well as others, be firmly committed to in section 61 findings in the revised final EIR.

9) Sound proofing of all housing units within 65 DB noise contours was to be finally committed to, but the Massport document limits the sound proofing to the availability of FAA funds. This does not comply with the May 1999 certificate. 19.11

10) Park and open space and impacts were to be studied in the Secretary's certificate of May 1999, and under federal Section 4f. But because the Year 2000 base year is not properly defined, the report conceals the fact that 4f properties in Chelsea and the South Boston Waterfront parks and several parks in East Boston and Chelsea are not within the 65 decibel contour without the runway, but are impacted by 65 DB noise with runway 14-32. The revised Final EIR/S should analyze this issue and 19.12

include Section 61, Record of Decision, and contractual commitments to fully mitigate these adverse impacts. or preclude the runway.

11) The unidirectional nature of runway 14-32 which the Secretary required be incorporated in a Section 61 finding was included in the Massport document, however, the FAA actually has primary jurisdiction in this matter, and there is not an adequate involvement of FAA in this "commitment" to make it meaningful. The Secretary and Administrator should require explicit and binding agreements with FAA concerning unidirectional and any other mitigation (such as wind restrictions) to be included in the Section 61 findings and Record of Decision and contracts with the City and community organizations, if Runway 14-32 is built. 19.13

12) The May 1999 certificate required analysis of the inadequacy of the ground access plans to live within the clean air parking freeze. This analysis has not been done either in the DSEIS/FEIR nor in the GEIR. To put the problem in context, Massport's failure to adequately manage ground access improvements has resulted in the $75 Million purchase of Park & Fly without a game plan for its timely relocation to facilitate the Bremen Street Park, and in a situation where the majority of people who drive to Logan now need to add a 45 minute delay to each trip to allow for the possibility that Logan garages are full. The improved provision of convenient transit and Logan express services has now become critical both to comply with the Clean Air Act and to eliminate this huge delay factor to a majority of Logan passengers. The Secretary and Administrator should require a specific set of improvements to the AITC, Urban Ring, South Station, Logan Express, and Airport Express Services to Worcester and Manchester as Section 61, and record of decision requirements.

13) The May 1999 certificate required an air quality initiative considering emission based landing fees be considered in the GEIR. Ultimately the emission based landing fee was dropped in favor of an offsite emission elimination "offset purchase" program to be financed by the airlines. The "offsite" purchases are supposed to target the immediate neighborhoods, but specific implementation details are lacking, the airlines have stated their opposition, and FAA has not been involved. The Secretary and Administrator should require that the airside initiative must be made more specific and become a Section 61 commitment of the revised Final EIR/S, with explicit approval by FAA of using an added fee per landing to finance the offsite purchases. 19.14 While this must be an ongoing program, to reflect the fact that increased size of aircraft will generate ever more air pollution to offset over many years to come, a specific initial program should be included. This program should include a minimization of unnecessary ground idle of aircraft through management of gate hold until actual takeoff is feasible. This minimization of ground air pollution should be facilitated by the (already approved) increased number of gates in Terminal A, the proposed FIS in Terminal B, which should improve flexibility of gate utilization, the already existing but ignored rules minimizing queues on "November" taxiway, and should be reinforced by a mitigation commitment to not build the center field taxiway. It should include the financing of a comprehensive health effects study by a competent, independent health care organization such as the East Boston Neighborhood Health Center. It should include the financing of a number of ground access initiatives such as the grade separation of the "D" Street intersection with the proposed AITC, the redesign of the Blue Line/AITC and Urban Ring interface to achieve high capacity and quality, the grade separated bus and truck bypass of Day Square to reach Chelsea, the establishment of a Massport remote terminal at South Station, and Logan Express sites,

the decentralization of car rental facilities to the remote terminals, the establishment of airport express services to Worcester and Manchester from Logan Express sites, and other ground access improvements to reduce both congestion and air pollution in the region and local neighborhoods.

14) The local community has raised concerns with the safety and air pollution impacts of the proposed centerfield taxiway, which requires taxiing aircraft to cross active runway 4L-22R in order to access the proposed taxiway from the terminals. The National Transportation Safety Board has raised concerns with runway incursions nationally and at Logan. In addition, concern has been raised that the added taxiway could be confused with a runway by landing pilots. The Massport document does not analyze these safety concerns. 19.15 19.16

The alternative to the taxiway of improving management of the gatehold procedure, so that aircraft would not "push back" until takeoff is actually feasible, thus avoiding unnecessary taxiway congestion, air pollution, and delay, was proposed by the community, but not analyzed in the Massport report. The Secretary and Administrator should require that this be addressed in the revised Final EIS/R and adopted instead of the taxiway. 19.17

15) Rare Species. The May 1999 certificate required a detailed relocation plan for the Upland Sand Piper, whose habitat would be destroyed by the center field taxiway. The Massport document does not include this. The site at Cape Cod is not clearly available, and it's not clear relocation will actually be effective. The impact can be avoided by a combination of demand restraint and gate management, combined with a relaxation of first come first served to prioritize large aircraft and critical flights. The Secretary and Administrator should require the revised Final EIR to include a 19.18

Section 61 and Record of Decision commitment to not build the taxiway but instead adopt, with FAA cooperation a revised gate hold regulation.

16) The May 1999 certificate discussed environmental justice, and since the certificate the Secretary has initiated an Environmental Justice Program stronger than the federal one. Yet the Massport document is woefully inadequate. It relied on the 1990 Census to argue that East Boston is not an environmental justice community, when available Year 2000 Census shows that low income and minority populations have grown dramatically in East Boston, and are subjected to cumulative impacts caused or exacerbated by Logan Airport. The EOEA criterion for disproportion is the disproportionate share of environmental burden for services which benefit the region (in the case of Logan, affluent and white population). Environmental justice concerns do not constitute a veto over a regional project, but they are supposed to trigger extra care to consider carefully cumulative impact, negative impact, alternatives, and mitigation, none of which is evident in the Massport document. The Secretary and Administrator should require Environmental Justice Process that satisfies the letter and spirit of the regulations, including respectful outreach, as part of a revised Final EIR/S. 19.19

17) The May 1999 document was silent on the changes in decision height proposed by Massport, but the runway 27, 22, and 15 approaches all raise issues of cumulative impact, potentially attracting more bad weather landings over residential areas, raising safety concerns. For this reason, years ago, Massport and FAA agreed to retain current decision heights so the aircraft would prefer to use the superior over the water approach at 4R. The communities advocated CAT III for runway 33 to make a second over water approach available. This Massport document does not show the respect to the community of properly recording the prior promise. In addition, Massport recently unilaterally took out the runway 22R blast fence over the objection of 19.20

the City and community, without an EIR. They refused to consider substitute blast fences outside of the runway safety areas, and stated that no change in runway use could occur because regional jets cannot fly over the Bayeswater neighborhood, which now appears to be untrue. The community believes that the over flight of the neighborhood is now lower and more frequent. Secretary Durand and the Administrator should require as part of a revised Final EIR Section 61 commitments increasing the displaced threshold for 22R landings, prohibiting regional jet operations over the neighborhood, and requiring a blast fence buffer of Constitution Beach and Bayeswater, just outside of the runway safety area. To the southeast, approaches to runway 33 and proposed 14-32 would intersect over Hull, requiring that one or the other be offset. If approaches to 33 can be offset to the north, the result would be less noise over Hull. This should be analyzed as part of a revised Final EIR/S. 19.21

18) The possibility of "wind restricting" 14-32 is discussed in the Massport document in an unsatisfactory way. The report claims it would result in noise reduction in the 27 and 33 communities, but that delay reduction would be somewhat less. It is not clear why there would be any less delay reduction for winds at or below 17.5 knots. Massport also asserts that the FAA control tower "wouldn't do it". It is hard to understand why this would be much less problematic than complying with PRAS during high delay situations, which Massport insists is achievable. The real problem with this idea is the lack of credibility of FAA and Massport to honor an agreement. The revised Final EIR should discuss this issue with credible mechanisms for enforcement, if it is to be considered. 19.22

19) Runway 14-32 would require the relocation of existing air cargo facilities, but the document does not describe the full impact on the industry or the impact on the 19.23

Bremen Street East Boston neighborhood and park where Massport plans to relocate some of these facilities, along with an expansion of the airfield closer to the Bremen Street

20) The regional context is not accurately described, resulting in a failure to identify capacity expansion and environmental impacts of various alternatives in a clear way. It has been clear since the 1980s that in the absence of regulation, over scheduling has been occurring at Logan causing both delay and adverse environmental impacts of noise and air pollution. In the 1980's Massport adopted aggressive efforts to encourage ground access to Logan with improved transit, Logan Express and water shuttle services; one of the most aggressive airport noise abatement programs in the U.S., and attempted to reduce over scheduling through a change in landing fees called PACE intended to encourage consolidation of excessive commuter services. Unfortunately, there have been practically no new ground access initiatives since 1993, no new noise abatement initiatives, and PACE was suspended by US Dot on a narrow procedural basis. In the early 1990's a new effort to develop a peak pricing for landing fees system consistent with US DOT's critique of PACE was underway, when Massport policy changed, and all three issues - ground access by public transportation, noise abatement, and peak pricing or other demand restraint have been discussed, but without practical implementation for almost a decade. 19.24

In the face of dynamic growth in airline passengers, and structural change in the industry, all three areas are suffering from stresses related to growth. Inaction in the face of dramatic change has negative consequences, and both passengers and neighbors or Logan are being negatively affected.

Logan exists in a regional context, it is the most important airport in New England, with the broadest array of services, and will always tend to attract passengers from other areas. The "commuter" pattern of small connecting services to Logan uses over 40% of Logan runway capacity to serve less than 10% of its passengers. Some decentralization of service to Manchester and Providence has occurred, mainly in response to inconvenient conditions at Logan, but these involve modest proportions of Logan demand, and while some reduction of passengers is occurring, and a critical mass of direct services is beginning to form at Manchester and Providence, the number of aircraft movement at Logan, which is the critical capacity issue does not go down without conscious policy. Indeed to the extent that capacity expands at Logan either through adding runway capacity or increasing aircraft size, more passengers will be attracted to Logan. So growth in passengers, hence ground access problems will be a consequence of any action at Logan which increases capacity. Conversely, inconvenient, congested runway conditions at Logan drive "niche markets" out of Logan to Providence, Manchester, and recently Hanscom.

In this regional context, any action, including inaction, will have consequence of expansion of some activities and adverse impacts, and the proposed runway 14-32 and peak pricing of landing fees are no exception. For this reason I have proposed that to understand the implication of various options at Logan it is necessary to construct a sensitivity analysis of the runway system within various levels of activity and aircraft size but Massport has been unwilling to carry this out. This could be rectified in the revised Final EIR/S to be provided. 19.25

21) Region 1 of EPA submitted a letter on November, 2000 requesting a series of analyses. The letter has been substantially ignored. Enclosed is a copy of the letter and the CAC letter (also substantially ignored). The revised Final EIR/S should rectify the ignoring of the EPA annual letters by FAA and Massport. 19.26

In closing, I urge that a unified revised FEIR/S be developed which deals adequately with these deficiencies.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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OFFICE OF THE
REGIONAL ADMINISTRATOR

November 6, 2000

Vincent Scarano
Director of Aviation
Federal Aviation Administration
12 New England Executive Park
Burlington, MA 01803

Dear Mr. Scarano:

As you know, since 1995 the Environmental Protection Agency has raised significant concerns about the proposed runway 14/32 at Logan Airport, in formal comments to and discussions with the FAA throughout the EIS process. Since Administrator Garvey's decision to require a Supplemental draft EIS (SDEIS), we have hoped, as you have, that the advisory panel process would be a springboard for objective analyses that bring a new perspective to the two central questions in this case – whether the runway is the best long term solution to delay at Logan; and whether the airport's current and projected impacts have been adequately understood, publicly disclosed, and mitigated. Regrettably, most of the past ten months have instead been consumed by Massport's consultants preparing and presenting detailed lectures on why they believe their original analyses supporting the runway were correct, thereby delaying new analyses with a different perspective. Massport's decision not to expand the technical assistance to the Community Advisory Committee (CAC) has also caused delay in the ability of the CAC to propose ideas for further analysis. At the same time, your patience and respect for the participants in the process, their hard work, and presentations by several outside experts have led to identification of a substantial amount of further analysis that is needed to provide a sound foundation for dialogue, environmental review, and decision making.

I am writing to urge you to take steps now to ensure that the SDEIS is the truly objective, fresh look that Administrator Garvey's charge to the advisory panel described and that the National Environmental Policy Act requires, rather than simply a reiteration of Massport's earlier conclusions. In our judgment, it is essential that the SDEIS address the concerns we raised in our April 1999 comments on the DEIS, which we hereby incorporate by reference, and several new issues that have been raised as part of the advisory panel process. These are discussed below. We want to register these points with you now so that FAA has an opportunity to

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conduct appropriate analyses prior to publication of the SDEIS.

I. The SDEIS should present a thorough analysis of two categories of alternatives to building the new runway: first, a long-term regionwide multi-modal transportation strategy, already discussed in EPA's April 1999 letter; and second, alternative ways to reduce overall delays at Logan through more efficient operation of the airport.

A. Under current projections of passenger growth and trends, Logan is headed for dramatically worse congestion and delay, with or without the proposed runway. Therefore, a more fundamental analysis is required that re-examines current operations and policies at Logan that affect ground access, terminal management, and use of the airfield. For this re-examination to be effective, the issues of ground access, terminal capacity, and the airfield (e.g., Terminal A, B, and the 8A Contract land swap), now being segmented into separate environmental processes, must be integrated into one process both to make the cumulative impacts comprehensible as is required by NEPA, but also to permit a coherent strategy to be developed.

B. A sensitivity analysis should be conducted, as discussed in a recent advisory panel meeting, that examines the relationship between delay at Logan and the number of aircraft movements scheduled per hour. It is clear that at 120 operations an hour, there is a large delay problem with or without proposed runway 14/32, and fewer operations per hour would mean less delay. Therefore, the analysis should examine the extent of delay at different levels of operations -- 60, 75, 85, 95, 100, 110 per hour -- to provide an understanding of what level of operations leads to meaningful reduction in delay. After gaining this information, the analysis should then examine alternative strategies for reducing the level of operations, the policy/management changes needed to implement them, and the costs associated with doing so. Alternate strategies considered should include, but not necessarily be limited to:

1.) *Reducing the number of small commuter operations from regional airports to Logan through consolidation of separate services.* As you know, commuter aircraft movements now account for more than 40% of all aircraft movements at Logan, while accommodating only 10% of the passengers, a majority of whom are destined to connecting flights, not to Boston. Reducing operations can be achieved by: changing the current landing fees, which favor small aircraft, to 'flat' landing fees which charge the same fee for each use of the runway, regardless of aircraft size; peak period pricing (at lower peaks, for example 100 operations per hour or less, compared to the current 110 operations per hour threshold assumed by Massport); and by 'jawboning' airlines to voluntarily act together to consolidate schedules, as was done in San Francisco.

2.) *Giving priority for takeoffs to the larger aircraft during peak periods of delay, by adjusting the current procedure of 'first come, first served'.* This would minimize hours of delay to passengers caused by aircraft delay.

3.) *Taking advantage of the passenger attraction to new improved rail service between*

Boston and New York. This would relieve Logan of excessive aircraft movements between Boston, New York, and Philadelphia, by decreasing the numbers of flights to New York, and maintaining reasonably large aircraft in those markets.

4.) *Using terminal leases to require airlines to cooperate in maintaining schedules at the level of operations that does not cause delay (as determined by the sensitivity analysis).*

5.) *Developing and implementing gate hold procedures that could control excessive taxiway queues as an alternative to building the new taxiway.*

C. The DEIS and the 'brown book' (Massport's interim draft of the DSEIS) assert that demand at Logan is fixed, and not affected by the proposed runway or any of the other proposed actions. But even if regional passenger demand is fixed, its distribution among Logan, other regional airports, and intercity rail services is affected by actions. In particular, the current plans for the Central Artery/Tunnel project were approved based on predicted air quality improvements resulting from smoother flow, without substantially increased auto traffic. The parking limit at Logan, agreed to by Massport as part of the CA/T environmental process and incorporated into the State Implementation Plan under the Clean Air Act, essentially requires that all passenger growth at Logan be accommodated on public transportation. But the state has not carried out its commitment for transit capacity expansion at the Logan Blue Line station. Moreover, recent analysis of the South Boston waterfront has raised questions about the capacity of the transitway to adequately serve South Boston, let alone provide substantial capacity to serve Logan. No progress has been made on establishing the remote terminal at South Station proposed over a decade ago, and the current proposal for development of air rights at South Station appears to preclude it. Further, no progress has been made in establishing a Logan Express terminal at Route 128 and the Mass Turnpike, proposed over 6 years ago.

In short, the current ground access continues to appear to lock Logan into practically a 'no growth' future, which calls into question how the current 26 million passenger volume can possibly grow to anything like the 33 million 10-year projection, let alone the 37 to 45 million passenger predictions in some of the analyses. Therefore, it is crucial that a new analysis be done to project a realistic number of passengers at Logan substantially lower than 33 million to predict aircraft movements, unless concrete evidence is produced to commit the necessary public transportation improvements to support higher numbers, including realistic implementation timetables and funding. On the other hand, if Massport is serious about growing Logan, then the analysis should honestly present the impact of the increased growth facilitated by undertaking the collection of projects designed to accommodate that growth, as discussed in Section II.A. below.

D. The SDEIS should also include an analysis of air cargo needs at Logan, and the impact of the proposed runway on air cargo capacity.

II. The significant impacts of current Logan operations on the surrounding communities, as well as the impacts associated with the new runway, need to be more clearly disclosed.

A. The SDEIS finally should acknowledge that Massport is expanding Logan's airfield capacity and must clearly present the environmental impacts that expansion will cause. Professor Odoni, one of the presenters at the advisory panel meetings, acknowledged that the net effect of the improvements at Logan would be to increase the airport's capacity for aircraft operations, certainly in the near term. Especially in light of the multiple airside and landside improvement projects Massport is undertaking, it is simply not credible to continue to insist that Logan's capacity will remain constant whether or not these projects are built. What Professor Odoni suggested is that the original DEIS and the brown book ignored not so much the possibility of induced growth as the likelihood of deterred operations at Logan. The SDEIS should present a reasonable assessment of the deterrent effect that increasing delays under the no-build scenario would have on passengers' desire to use Logan and airlines' desire to schedule flights at the airport. It should then estimate the resulting difference in the number of operations under the build and no-build scenarios and the corresponding change in environmental impacts. EPA is not advocating for congestion when we ask for an assessment of deterred growth under a no-build scenario. We simply want a clear portrayal of the consequences of undertaking these projects. Ignoring the prospect of deterred growth allows the analysis to ignore the possibility that noise impacts might differ more significantly under the build scenario than the current analysis reveals. Moreover, it is possible that air emissions might show an increase under the build scenario when the SDEIS accounts for this effect.

B. A 'wind-restricted' runway, in which use is limited to only those times when northwest winds would otherwise limit the airfield to one or two runways absent 14/32, should be considered as a separate alternative. The analysis should include noise impacts as well as an evaluation of the legal mechanisms available to guarantee that the restrictions can be relied upon to be effective and permanent.

III. Noise impacts

A. The analysis should include but not be limited to the day-night noise averaging (DNL) metric. While the DNL measure is useful for purposes of broad land use compatibility comparisons, it is not helpful in disclosing to the affected public the actual on-the-ground impacts of individual overflights, and in this instance, it also masks the important fact that daytime flights over certain communities will significantly increase as a result of the new runway.

B. The analysis should identify 1) the probable number of overflights by geographic area and community, looking at 55 DNL as well as higher DNLs, and the probable number of overflights exceeding 90, 85, 80, and 75 SEL (single event sound exposure level); 2) the population in each geographic area expected to be highly annoyed; 3) the population potentially subjected to wake-ups from night flights, looking at both open and closed window conditions; 4) sensitive receptors, such as schools, as well as other populations expected to experience speech interference due to overflights, using the 'time above' (TA) metric, broken down to people exposed to sound above 65 dBA for periods greater than 10, 30, 60, 90, and 120 minutes a day.

C. The SDEIS should demonstrate that the noise model used to predict noise and identify homes eligible for soundproofing is accurate and consistent with actual in situ noise monitoring which appears to indicate that the model underestimates noise levels, at least in some neighborhoods.

D. A cumulative noise impact analysis, as required by NEPA, should be conducted, which examines the combined effect of noise from aircraft at Logan (take-offs and landings, aircraft on the taxiways) with other noise sources.

E. As a result of Massport's recent announcement that they intend to remove the blast fence at the end of the runway nearest the Bayswater community, the SDEIS should address: 1) any increase in noise that removal of the blast fence will cause in that community; and 2) whether Massport's assertions that the blast fence poses a safety risk at the end of that 8000' runway are in conflict with its assertions that the proposed 5000' runway 14/32 is long enough for aircraft to use safely.

F. In view of longstanding plans in Boston to develop the South Boston waterfront, the SDEIS should address the potential conflict of the airport operations with these plans, as required under NEPA. In addition, the SDEIS should address the noise impacts of the different uses of runways that would result if the currently proposed building heights are allowed on the waterfront. These different uses apparently will include the decreased use of runway 27, the decreased use of runway 33, and greater use of runway 4-22. It is unclear if FAA believes that the increased use of runway 27 that would occur as the result of building the new runway 14/32, or its existing use, would be inhibited by the proposed high buildings. In any case, the SDEIS should address the impacts of the tall buildings on Logan operations, with and without the new runway.

G. The noise analyses presented to date includes references to compliance with the Preferential Runway Advisory System (PRAS) inappropriately. The PRAS is not a technical criterion; rather, it was an agreement between Massport and the CAC which has now been rejected by the CAC.

H. Massport should be pursuing reasonable measures to reduce existing noise impacts from Logan, and the SDEIS should account for the effect of those measures along with presenting the baseline of existing noise impacts. The current noise footprint, with all stage III aircraft year 2000 fleet, should be provided, along with identification of the potential benefit of eliminating 'hush kitted' aircraft. In addition, the potential for development of adequate incentives to consolidate aircraft operations with substantially less delay could reduce total noise exposure. Consolidating operations could also permit the development of new and meaningful PRAS procedures to distribute unavoidable noise fairly among neighboring communities, which would be much more credible and effective under less congested conditions. This analysis should be prepared to support a Part 161 process to allow more effective procedures to reduce both delay and noise exposure.

IV. Environmental justice concerns

We appreciate the expanded assessment of the environmental justice implications that Massport developed as part of the interim draft of the SDEIS. As you know from ongoing discussions between our agencies, EPA continues to have concerns about the structure of that analysis. Many of those concerns grow out of the more fundamental questions we discuss above about the presentation of environmental impacts, and our concern that the true impacts of building this project are masked by the forecasting assumptions made in the document. In addition, we have the following concerns about the environmental justice analysis.

A. Using Suffolk County as the sole reference community in the environmental justice analysis does not fully address the possible disproportionately high and adverse impacts of the project. Using the county boundary surrounding Logan Airport as the reference community results in an unreasonably narrow basis for comparison, because Suffolk County is quite small and is made up largely of communities impacted by the airport. While using an airport's host county as the reference community may be appropriate in other cases, in this case Suffolk County's small size justifies extending that comparison to include other reference communities to present fully the environmental justice implications of expanding Logan:

1) One fundamental question an environmental justice assessment should address is how the population that benefits from the project compares with the population that is burdened with the project's adverse impacts. Massport has sophisticated passenger data showing which communities use the airport for travel - the key benefit Logan provides to the area. For example, we understand that over half of Logan's origin-destination traffic is generated by the area outside Boston and within I-495, and Massport told the advisory panel that the greatest growth in Logan's passenger base comes from the communities around Route 128 and I-495. As we stated in our April 1999 comments, comparing the communities that use the airport with the communities that bear the burden of the airport's impacts would help illuminate the relative benefits and burdens of the project and the corresponding environmental justice implications.

2) In addition, it would aid decision makers to include a comparison of the communities that would be impacted by alternatives to expanding operations at Logan as a reference community. For example, if increased delays at Logan have the predictable effect of making Manchester and Providence airports increasingly attractive to airlines and passengers, it would make sense to compare the communities impacted by increased operations at those airports with the communities impacted by Logan's operations.

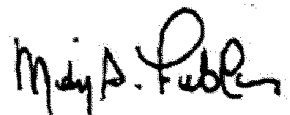
B. The EIS process thus far is avoiding important data on public health around Logan -- data of the sort that environmental justice guidance encourages agencies to take into account when assessing cumulative impacts in an environmental justice analysis. The March 2000 interim SDEIS notes that the Harvard School of Public Health study of particulate matter and gaseous pollution in South Boston drew to a close in1999, and EPA understands that data is available

from that study; but none of it is discussed in the interim SDEIS. Additionally, the Massachusetts Department of Public Health is undertaking a study of environmental risks around the airport. The results of these studies may shed light on the troubling results of the Winthrop study and the cumulative impacts of the airport and this project on the surrounding communities that need to be addressed in this EIS process.

C. It must be emphasized that the intent of the environmental justice Executive Order is to provide low income and minority communities the same level of environmental quality and protection as affluent communities by improving the environmental quality in the communities surrounding Logan, not by degrading that of affluent communities. In our view, this implies an obligation to conduct a comprehensive environmental justice process and Part 161 process to improve the compatibility of the existing level of Logan activity with its neighboring communities before deciding to build a new runway.

EPA urges FAA and Massport to conduct the additional analyses discussed in this letter as a first step toward preparing the SDEIS, and to present the results of the analyses to the advisory panel and other key parties before proceeding toward preparation of the document. My staff and I stand ready to work with you to ensure that the SDEIS meets the needs of the communities and the requirements of NEPA. Thank you for your consideration.

Sincerely,



Mindy S. Lubber
Regional Administrator

cc:
Jane Garvey, Administrator, FAA
Senator Edward M. Kennedy
Senator John F. Kerry
Congressman Joseph Moakley
Congressman Edward Markey
Congressman Michael Capuano
Governor Paul Cellucci
Mayor Thomas Menino
Virginia Buckingham, Massport
Anastasia Lyman, Sandra Kunz
Co-chairs, Community Advisory Committee

December 5, 2000

Mr. Vincent Scarano
Division Manager
Federal Aviation Administration
12 New England Executive Park
Burlington, MA 01803

Reference: **CAC Comments on Brown Report - SDEIS**
Logan Airside Improvement Projects

Dear Mr. Scarano:

Please find attached a review of the draft-group review interim supplemental draft EIS dated March 24, 2000 "Brown Report" prepared by the Consultants to the Community Advisory Committee "CAC". This document is intended as a good faith effort from the CAC to assist the FAA in addressing the community concerns regarding the Logan Airside Improvement Project.

We realize the Brown Report was prepared prior to the initiation of the FAA SDEIS Panel; and therefore does not comprehensively include options and concerns that were identified in the last nine months. Thus, our enclosed review includes general and specific comments on the Brown Report as well as suggestions for additional analysis identified by the community regarding this project.

Under NEPA requirements, FAA must compare viable alternatives to identify the preferred alternative. The SDEIS must comply with this intent and not concentrate solely on Massport's preferred alternative or the do-nothing alternative. As we understand, the intent of the FAA Panel and the subsequent supplemental EIS was to provide additional analysis on DEIS alternative and to expand the analysis to consider other options or combination of options to address Logan's delay concerns in the hopes of seeking an acceptable solution to Logan's delay concerns for all shareholders: Massport, FAA, airlines, and the neighboring communities. Thus we suggest the SDEIS include all options identified in the DEIS (not just 1A and 4) and other options identified through the SDEIS FAA panel process.

As we have consistently made you aware, the FAA SDEIS Panel process has been disconcerting to the CAC; namely because the majority of the presentations only present the proponent's one-sided view on the DEIS analysis. We respectfully ask that the SDEIS present the facts – without crafting those facts for the proponent's preferred alternative. A case in point is the constant reporting of delay savings based on the high-fleet-passenger scenario – which Massport forecasters now indicate is not likely. Another recent example is the presentation of the air quality analysis that overemphasized (3 times) that Alternate 1/1A results in the lowest emissions. This statement – though technically correct – illustrates the bias of the Massport consultants (the preparers) of the SDEIS and DEIS documents. In point of fact, all alternatives are lower than the minimum air quality pollutant threshold – the standard by which the alternatives are being judged.

Some of the CAC's major concerns regarding the Logan airside improvement project remain.

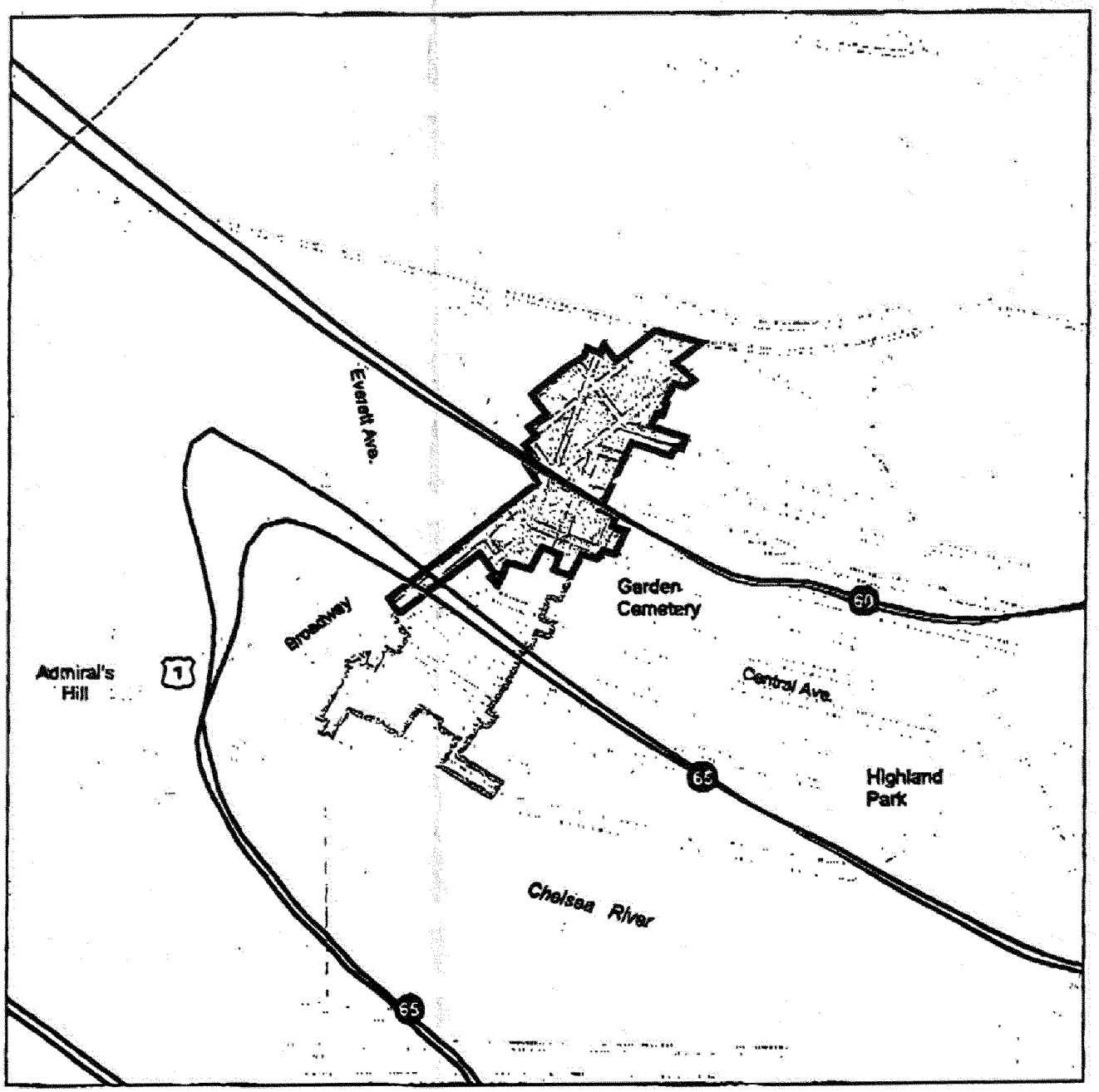
- The existing and future noise impacts of operations on communities surrounding Logan,
- The need to use additional noise metrics to quantify for the general public the impacts associated with the runway development by community,
- The unconstrained aviation passenger forecast that has been developed, when realistically landside features will also constrain passenger growth,
- Using the attainment of PRAS goals as a factor in modeling the runway operations, since the PRAS goals are over 20 years old and have historically not been used by the aircraft control tower and PRAS attainment is never realistic,
- Limiting demand management policies to one specific analysis of peak period pricing and not analyzing additional strategies that could have an reducing-impact on delay,
- Lack of consultation with the airlines – an important stakeholder – during the SDEIS process to explore additional options to reduce Logan delay,
- Refusal to recognize that the development of the runway does increase the overall capacity of Logan, ultimately allowing for a higher annual service volume. This is a major fear of the community because with the runway, a greater number of aircraft "throughput" can be realized,
- Concerns over trends in regional jets in the Logan market for existing and future commercial operations,
- Lack of historical action for increasing alternate modes of transportation and less reliance on aircraft operations at Logan through regionalization, and
- Lack of innovative mitigation alternatives available to address the concerns of the community with respect to continued growth and development of Logan.

The CAC urges the FAA to review the enclosed review comments of the Brown Report and request for additional analysis and incorporate the information to present a fair and rounded presentation of the final SDEIS and the environmental consequences of the development of the airside improvement project. Thank you for your consideration.

Yours truly,

Anastasia Lyman
Co-Chairman CAC

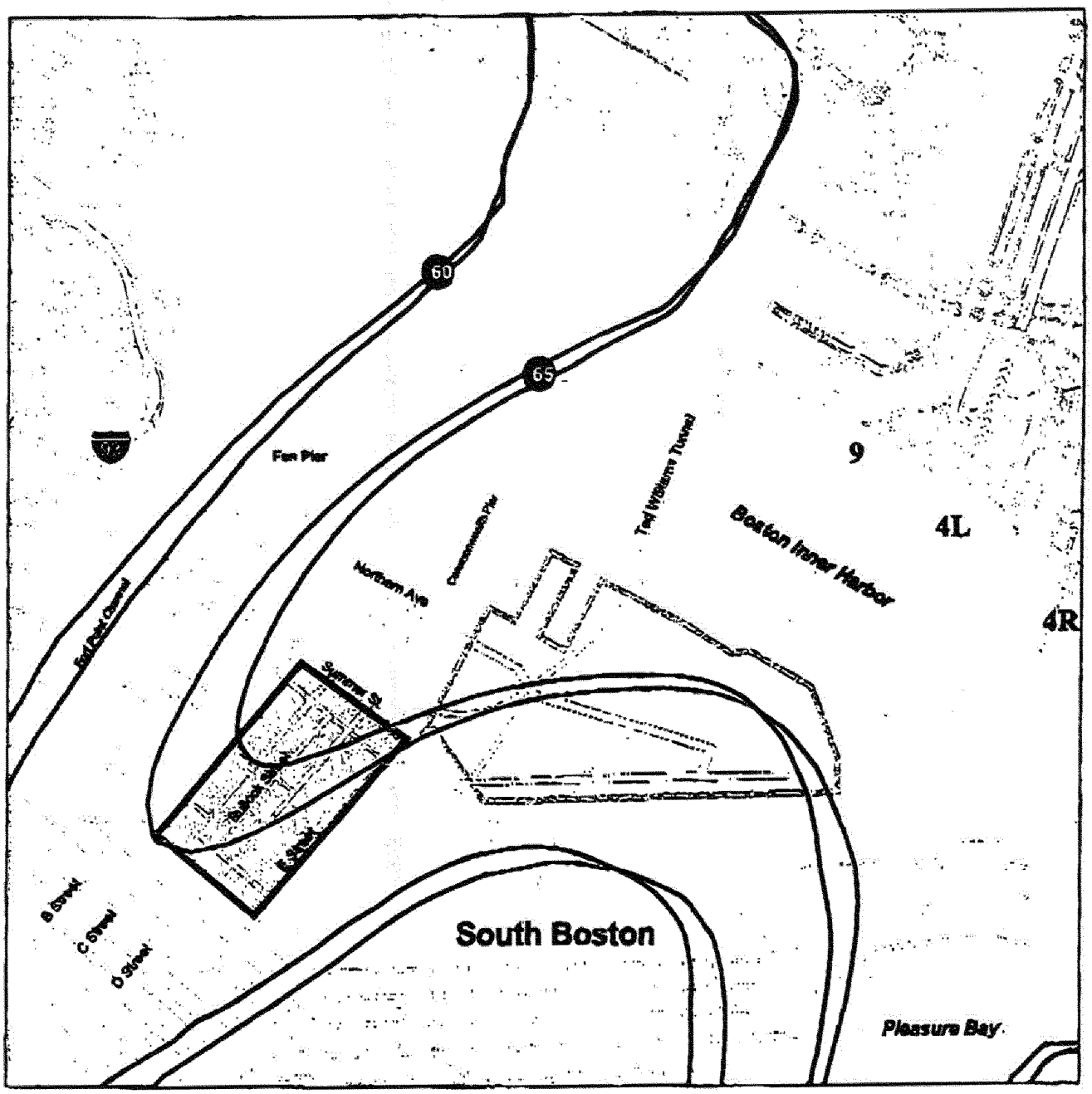
cc: CAC Members



Source: Harris Miller Miller & Hanson

Figure 6.3-3

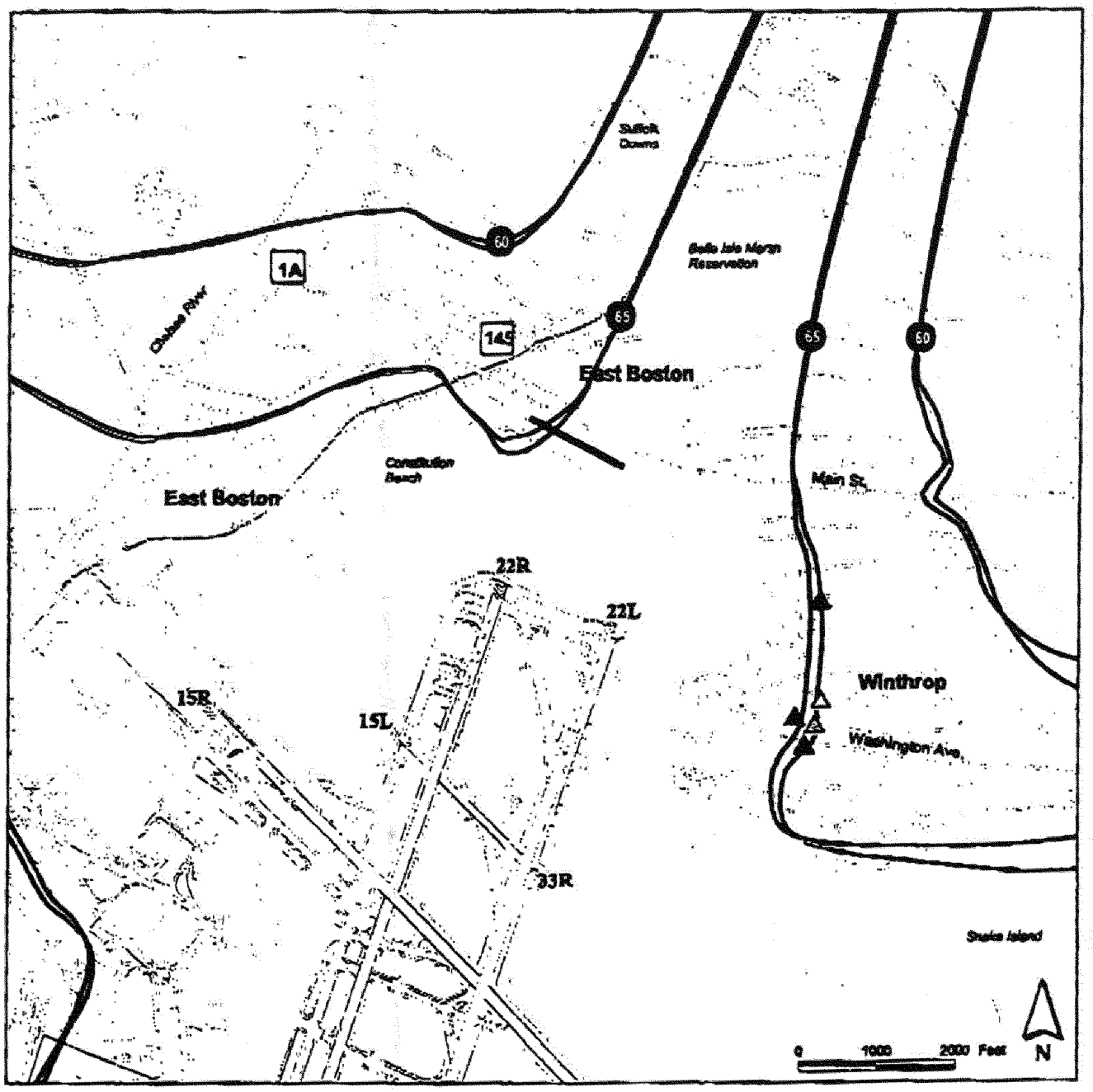
Cultural Resources - Chelsea



Source: Harris Miller Miller & Hanson

Figure 6.3-2

Cultural Resources - South Boston



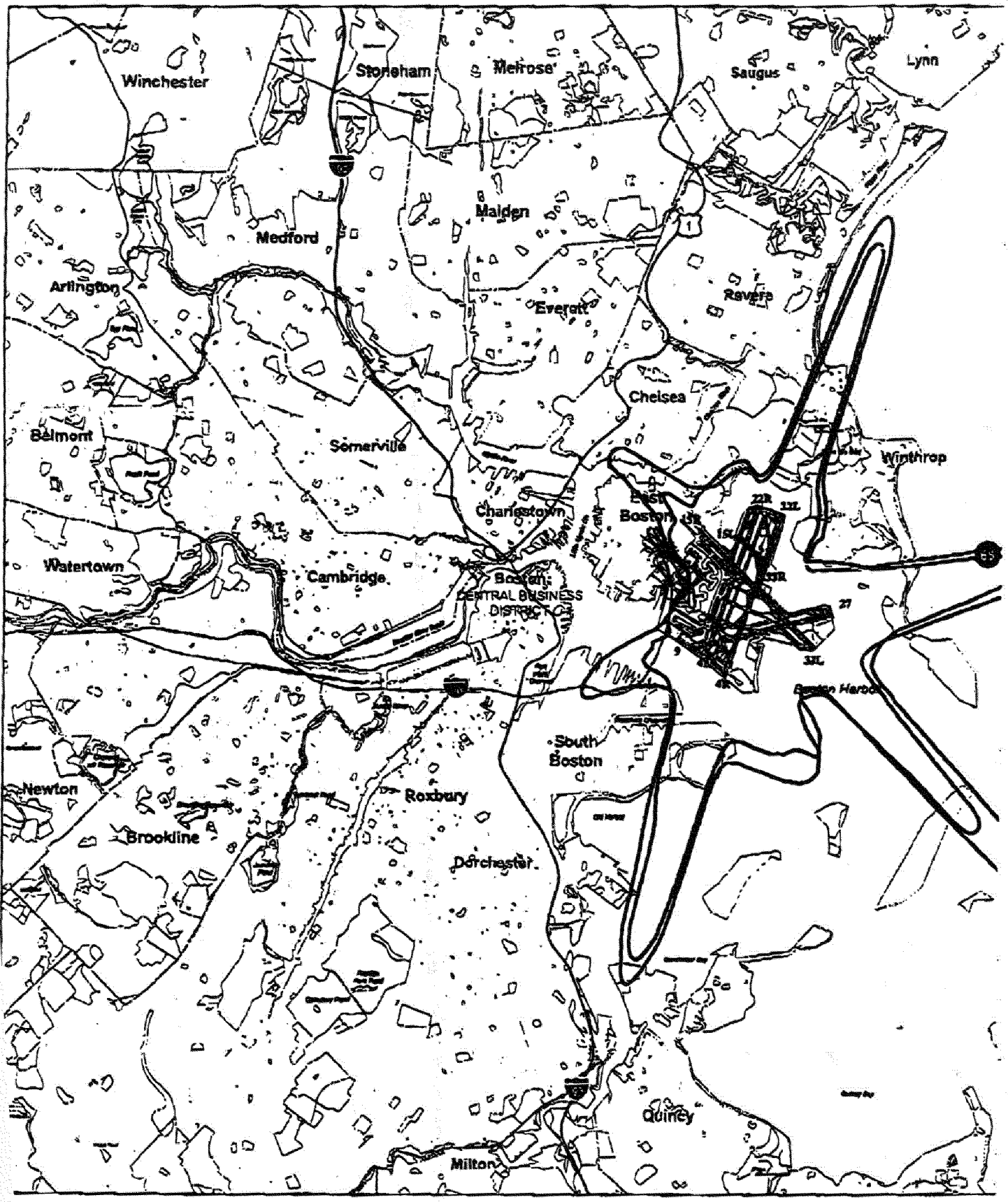
Legend

- No Action Alternative 29M Low (60 and 65 DNL)
- Preferred Alternative 29M Low (60 and 65 DNL)
- Cultural Resource Area: St. Andrews Road
- Cultural Resources: 340 Somerset Avenue; 45 Enfield Road; 75 & 77 Somerset Avenue; 88 Somerset Avenue; 84 Somerset Avenue

Source: Harris Miller Miller & Hanson

Figure 6.3-1

Cultural Resources - East Boston, Winthrop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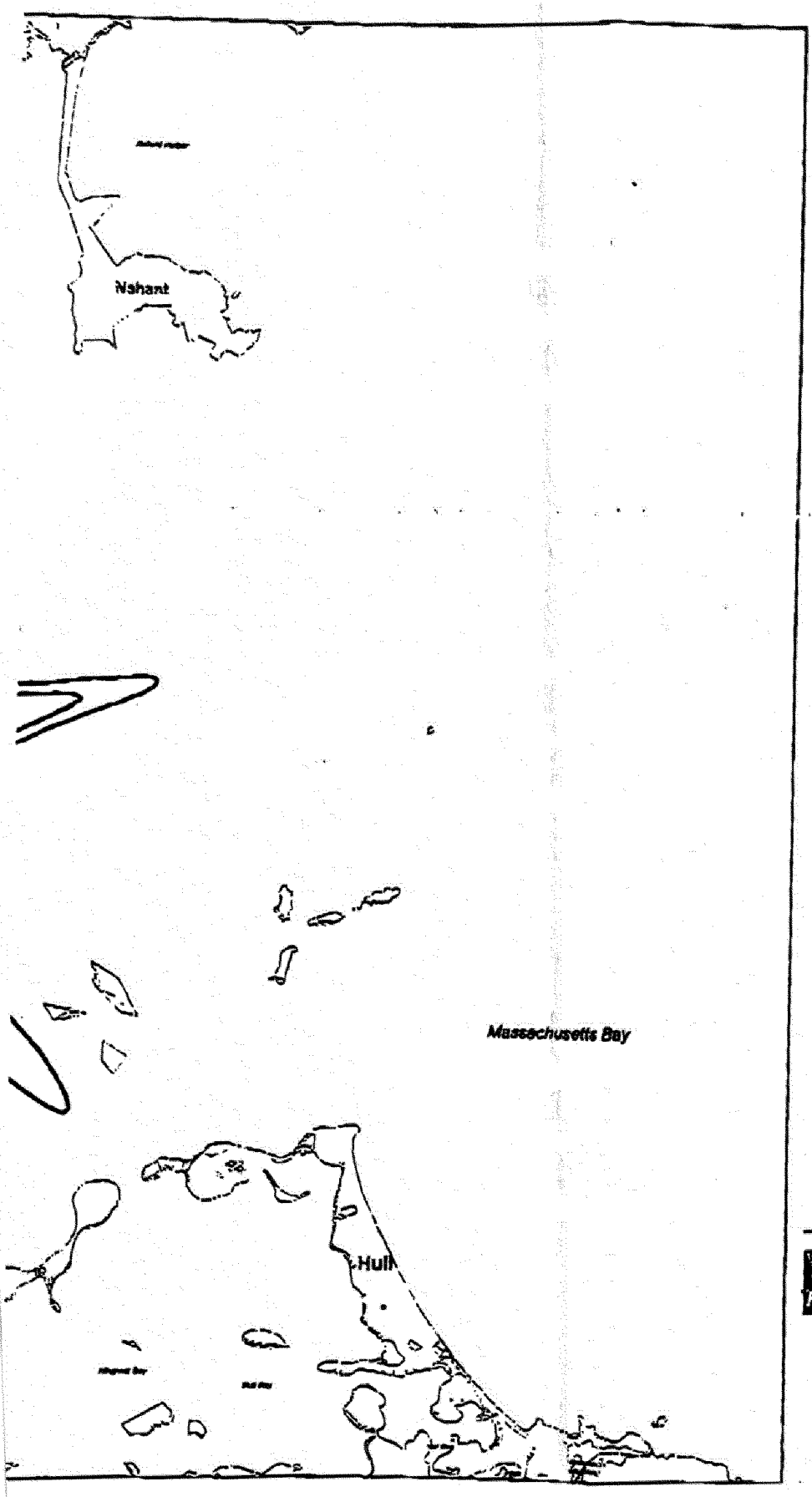
Melrose
Saugus
Lynn
Medford
Malden
Arlington
Everett
Revere
Chelsea
Belmont
Somerville
Winthrop
Charlestown
East Boston
Watertown
Cambridge
Boston
CENTRAL BUSINESS DISTRICT
Boston Harbor
South Boston
Newton
Roxbury
Brookline
Dorchester
Quincy
Milton



Legend

65 DNL

Alternative-1A

Alternative-4

Open Space

Census Blocks

Populated

Non-Populated

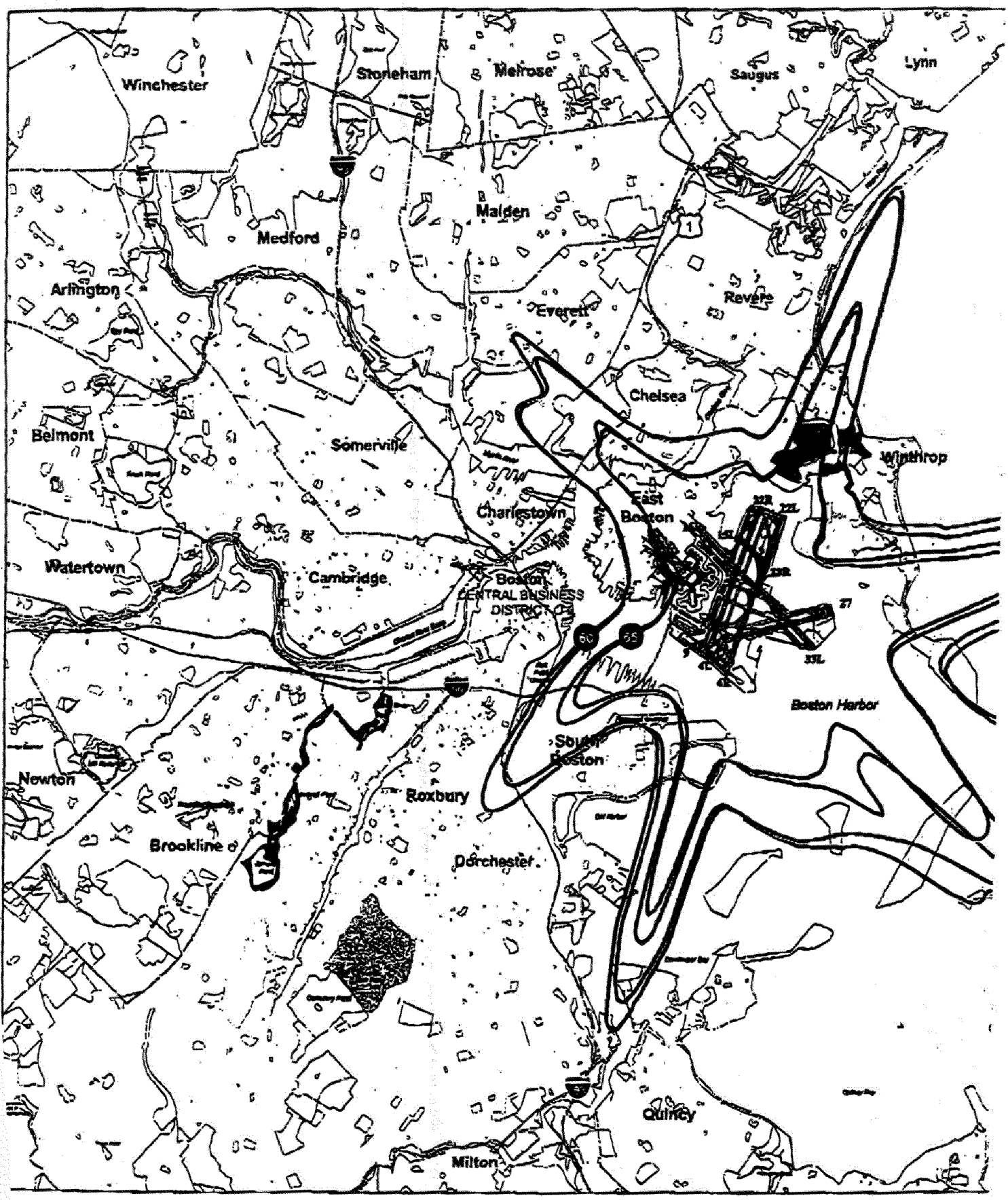
N

0 0.5 1 1.5 Miles

Figure 6.2-12

High RJ Fleet - Preferred Alternative and Alternative 4, 65 DNL

Source: Harris Miller Miller & Hanson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Melrose
Saugus
Lynn
Malden
Medford
Arlington
Everett
Revere
Chelsea
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Somerville
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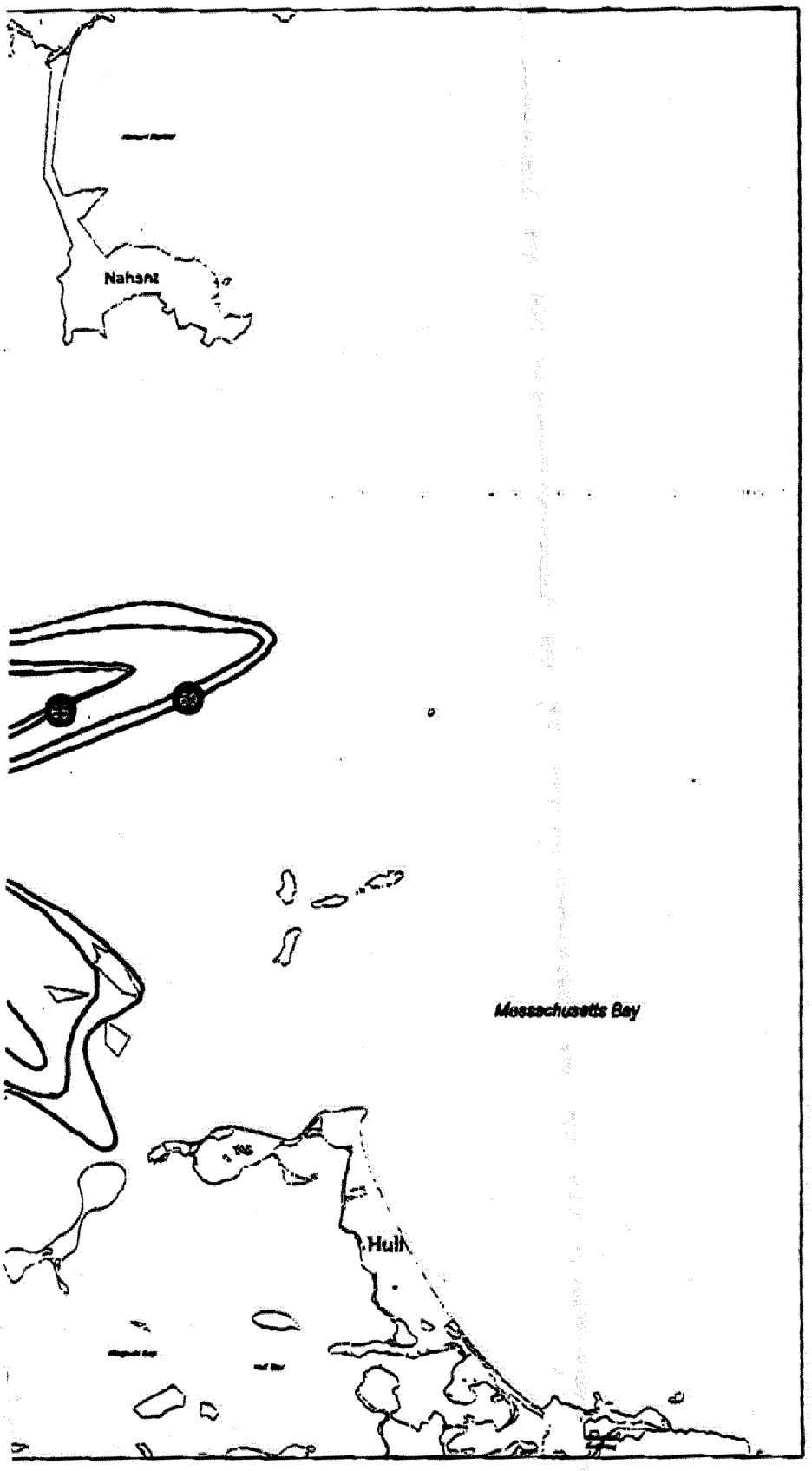
Dorchester
Quincy
Milton



Legend

No Action Alternative 29M Low
(60 and 65 DNL)

Preferred Alternative 28M Low
(60 and65 DNL)

Parklands
- Arnold Arboretum
- Belle Isle Marsh Reservation
- Boston Harbor Islands
- Franklin Park
- Olmsted Park / Emerald Necklace
- Open Space

Census Block Boundaries

N

0 0.5 1 1.5 Miles

massport

Figure 6.3-4

Parklands and 29M Low - No Action and Preferred Alternatives

Source: Harris Miller Miller & Hanson

Code	Topic 1	Topic 2	Comment	Response
19.1	Public Participation	SDEIS Scope	Most of the requirements of Secretary Durand's May certificate have been ignored, and much of the additional analysis requested by mayoral panelists, the Citizens Advisory Committee, AIR inc, CARE and EPA Region I have been ignored.	The FAA considered comments and requests put forward by the Supplemental DEIS Panel, EPA Region 1, the CAC, and other individuals and organizations in developing the scope of work for the Supplemental DEIS. In addition to meeting with the Supplemental DEIS Panel, the FAA met individually with EPA Region 1 and the CAC to review their comments and consider their requests. Analysis was performed following the Draft EIS/EIR to respond to the EOEA Secretary's Certificate. That analysis was presented in the Supplemental Draft EIS/Final EIR. The EOEA Secretary found that the Final EIR adequately addressed the requirements of the Certificate.
19.2	Regional Jets	Runway 14/32 Utilization	Logan needs to handle approximately 30% to 50% more passengers within the next 10 to 15 years, on a runway configuration which is already congested and beyond capacity. This can only happen if effective ways are developed to increase the average number of passengers per plane by about 50%, but the experience has been that the number of passengers per plane has not been increasing at Logan, but possibly actually shrinking because of the entrance of small regional jets replacing large jets. The proposed short runway 14-32 is not long enough to handle the emerging regional jets.	The future 37.5 million passenger scenario which is expected in approximately 2015, represents 37 percent growth over Logan's 2000 passenger volume. Logan Airport is sometimes “congested and beyond capacity,” but this situation typically occurs under conditions of poor weather and/or strong northwest winds which limit operations to one or two active runways. Approximately 80 percent of the time, three runways can be used and current Logan demand can be handled with little delay. The average number of passengers per flight at Logan Airport fluctuates from year to year, but has increased on a long-term basis. The emergence of regional jets at Logan Airport has not reduced the average passenger load on Logan Airport flights, due to a concurrent decrease in activity with turboprop aircraft. Massport has adopted policies to promote further increases in average aircraft size and more efficient use of available capacity. Gate utilization standards in new terminal leases are designed to encourage activity with jets of greater than 100 seats. In addition, the Massport Board has committed to initiate Peak Period Pricing or an alternative demand management program as a necessary tool to prevent the emergence of future overscheduling conditions at Logan. The proposed Runway 14/32 is long enough to handle most arriving regional jets projected to operate at Logan. The certified landing distance of all RJs is less than 5,000 feet under standard temperature conditions, dry pavement, no wind and maximum landing weight. Even light head winds reduce required landing distances significantly. On the other hand, wet runways and extremely high temperatures can increase the landing distance.

Code	Topic 1	Topic 2	Comment	Response
19.3	Regional Jets	Forecast	The "29 million low" scenario of the document, portrayed as representing conditions in 2003 to 2005 includes 3% regional jets, low by an order of magnitude. But regional jets, based on the CAC consultants' analysis are unlikely to be able to use the proposed 5000' runway in significant numbers. Massport has predicted a large proportion of regional jets will use 5000' runway, while CAC analysis shows that "Canadairs" and "Embriers" are dominating the regional jet fleet, with Dorniers constituting approximately 10%. It appears certain from this information that the "29 million low" scenario which is the basis of much of the analysis in the report, the 37.5 million low, and 37.5 million high all substantially over state the proportion of the fleet that will be able to use a 5000' runway, and thus substantially over state the delay reduction it would provide, so almost all of the predictions of delay are inaccurate, and the noise and air pollution predictions which rely on the runway utilization and delay analysis are not reliable.	The CAC analysis of the regional jet fleet mix includes several carriers with large fleets of Canadair CRJ's, but with little or no presence at Logan Airport. By failing to consider which carriers are likely to have a significant presence at Logan, the CAC analysis overestimates the future role of the Canadair CRJ at Boston. American and Delta, the leading RJ operators at Logan, are undertaking terminal redevelopment projects, and each has forecast a significant number of future RJ operations at Logan. American has projected its future RJ fleet at Logan to be comprised exclusively of Embraer models, while Dornier regional jets make up approximately 75 percent of Delta's future RJ fleet at Logan. US Airways, Logan's 3rd leading operator of regional jets, currently operates only Embraer ERJ's at Logan through its regional affiliate, Chautauqua Airlines. The RJ fleet and orders of "carriers likely to operate at Logan" as described by the CAC are heavily weighted by the fleets of Comair and Atlantic Southeast Airlines (ASA), two of Delta's regional carrier affiliates that both operate substantial fleets of Canadair CRJ's but have little or no presence at Boston. Atlantic Southeast's network is focused at Atlanta and Dallas/Ft. Worth and the carrier has no flights at Logan. Comair RJ flying is concentrated at Cincinnati and the carrier operates only 4 of its system wide 770 daily RJ departures at Boston (July 2001). Delta's principal regional partner at Boston is AC Jet which operates 42 of the carrier's 46 daily RJ departures from Logan, all with Dornier 328Jets. By including carriers with industry leading fleets of CRJ aircraft but with little or no presence at Logan, the CAC analysis substantially exaggerates the likely future role of the Canadair CRJ at Logan. This overstatement is relevant since the FAA's independent review of probable RJ use of the proposed 5,000 foot runway indicated that all RJ models except the CRJ were likely to use the runway. The 37.5M High RJ Fleet was specifically developed and analyzed for the Supplemental DEIS to determine how significantly expanded regional jet usage would affect the operational and environmental benefits and impacts of the proposed airside improvements at Logan. The 37.5M High RJ fleet scenario contains 184,000 annual regional jet operations at Logan, or more than twice the current level. Based on projections of regional jet use for the proposed 5,000 foot Runway 14/32 developed by the FAA, the Embraer 135/145 models would use the runway for arrivals during dry weather conditions, and the Dornier 328 Jets would use the runway during all weather conditions. Under these assumptions, when Runway 14/32 is in use it would be utilized for arrivals by approximately 70 percent of the projected future RJ fleet mix at Logan. See Section 3.3 of the Final EIS. The analysis of the Preferred Alternative under the 37.5M High RJ fleet produced results that were similar to the analysis of the original fleet forecasts and still clearly demonstrates the benefits of the Preferred Alternative. In addition, a near-term 29M RJ fleet was analyzed in this Final EIS to examine the near-term impacts of regional jets. The 29M RJ fleet falls between the 29M Low and 37.5M High RJ fleets in terms of the number of regional jet aircraft. The results of the 29M RJ analysis, as described in Section 3.4 of this Final EIS, are consistent with the findings of the Draft EIS/EIR and Supplemental DEIS/FEIR, i.e., the Preferred Alternative produces substantial delay reduction benefits and improves the ability to achieve a more geographically balanced distribution of Logan Airport's flight activity and noise impacts. Furthermore, a sensitivity analysis demonstrated that the majority of the delay reduction benefits would be retained even at levels of regional jet use significantly below those identified by the FAA. See Section 3.3 of the Final EIS for a discussion of the RJ sensitivity analysis and Section 3.4 for a discussion of the near-term 29M RJ fleet scenario.

Code	Topic 1	Topic 2	Comment	Response
				American Eagle and ACJet (a Delta Connection carrier), the largest regional jet operators at Logan, have provided letters confirming their intentions to use Runway 14/32 when it becomes operational. Refer to Appendix F of the Final EIS for letters from these airlines as well as other airlines and the Air Transport Association.
19.4	Peak Period Pricing	Benefits	Encouraging the conversion and consolidation of commuter services to regional jets is the single most effective action to reduce delay at Logan and should occur immediately.	Runway 14/32 is needed today. As Section 4.6.1 of the Supplemental DEIS/FEIR demonstrated, Runway 14/32 would have reduced runway-related delays by over 30 percent if it had been available in 1998. Peak Period Pricing and Runway 14/32 are designed to address different causes of delay. Peak Period Pricing would target delays that result from airline overscheduling, while Runway 14/32 is designed to prevent delays that occur during northwest winds. Furthermore, Peak Period Pricing has been shown to have less benefit under near-term Low Fleet scenarios which are not characterized by overscheduling, while the proposed unidirectional Runway 14/32 reduces delays significantly under all scenarios. While Massport has committed to implementation of a demand management program, this in no way should preclude or delay construction of Runway 14/32 as the two proposals affect very different causes of delay. In its Section 61 Findings pursuant to the Massachusetts Environmental Policy Act, Massport committed to initiating the rule-making process to implement an enforceable peak period pricing program, or an alternative demand management program with comparable effectiveness, for Logan Airport. The objective of this program will be to avoid or reduce delays associated with overscheduling of Logan Airport's available capacity in good weather conditions. The goal is to have a demand management program in place before overscheduling conditions occur at Logan Airport. The FAA acknowledges that Logan Airport is one of the nation's most delayed airports and that Massport has committed to and will propose to implement a demand management program to reduce overscheduling delays. The FAA expects that any such program that is proposed for implementation will be consistent with applicable Federal law. The FAA is currently working with the U.S. DOT to establish national guidelines for demand management programs at U.S. airports. As part of this national effort, Logan has been selected as one of three airports to serve as a case study for U.S. airport demand management strategies. While converting commuter flights to regional jets would increase average aircraft size, many small New England markets that rely on air service to Logan cannot support services operated with larger aircraft. Markets such as Provincetown, Augusta, Bar Harbor, and Rockland are too small or seasonal and cannot economically support services with larger aircraft. These markets also cannot handle RJs due to runway length, width, or strength limitations or due to inadequate facilities.

Code	Topic 1	Topic 2	Comment	Response
19.5	Fleet Mix/Forecast	PPP	..the document does not carry out the analysis of potential for changes in regional carrier fleet in response to peak period pricing, as required in the May 1999 certificate. The paragraphs on pp. 4-46 and 4-47 state "fleet mix changes were not explicitly modeled.." but the fleet mix is the heart of the matter. ..the challenge is to adopt a significant runway landing fee flat or peak-pricing plan (with exceptions for economic hardship) to encourage consolidation of the 197,000 regional non-jet operations projected in Table 4.3-3 for the 29M low scenario to at most 166,000, in order to at least not worsen the Year 2000 delays. The longer-range challenge, which requires planning now, is to restrain the displacement of large jets by larger numbers of small regional jets, which threatens unacceptable levels of delay and noise. This second challenge will not be manageable with landing fees strategies alone, as the Massport analysis shows, and probably requires the use of Massport powers as proprietor over terminals to prioritize use of scarce gates to larger aircraft. ...The Secretary and Administrator should require the preparation of a more aggressive peak pricing plan for Logan as part of a revised Final EIR.	In its Section 61 Findings pursuant to the Massachusetts Environmental Policy Act, Massport committed to implementing an enforceable peak period pricing program, or an alternative demand management program with comparable effectiveness, for Logan Airport. The objective of this program will be to avoid or reduce delays associated with overscheduling of Logan Airport's available capacity in good weather conditions. The goal is to have a demand management program in place before overscheduling conditions occur at Logan Airport. The FAA acknowledges that Logan Airport is one of the nation's most delayed airports and that Massport has committed to and will propose to implement a demand management program to reduce overscheduling delays. The FAA acknowledges Massport's efforts and expects that any such program that is proposed for implementation will be consistent with applicable Federal law. The FAA is currently working with the U.S. DOT to establish national guidelines for demand management programs at U.S. airports. As part of this national effort, Logan has been selected as one of three airports to serve as a case study for U.S. airport demand management strategies. Massport is already incorporating gate management policies in its terminal leases that prioritize use of large jets with greater than 100 seats.
19.6	Peak Period Pricing	Exemptions	The report identifies that a further targeted exemption for small aircraft capable of using "BABY 15-33" (in markets for airports within 50 miles where very small aircraft may be required for economic viability) would be possible. Since this sub-market is the location of the most immediate potential for economic disruption, this exemption should take priority.	Cape Air which serves small markets including Provincetown, Martha's Vineyard, and Nantucket with 9-seat aircraft is the only scheduled airline that makes regular use of the 2,600 foot Runway 15L/33R. This runway is only available when the airport is operating on a compatible runway configuration, such as Runway 27/33L. As a result, a potential exemption for flights using Runway 15L/33R would shelter a very limited percentage of total services provided from small, close-in markets. In the year 2000 (according to Massport statistics), there were approximately 3,100 annual arrivals to Runway 33R, representing less than one percent of annual airport operations, and only ten percent of Cape Air's 31,000 annual operations.
19.7	Regional Transportation	GA	Development of means to relocate all or part of the 30,000 annual GA operations out of Logan to Hanscom was supposed to be dealt with in the Massport FEIR, according to the May 7, 1999 certificate. This is not adequately dealt with in the Massport report. The Massport report was to identify any impediment to requiring the relocation but it is not dealt with.	Federal constitutional provisions (i.e., preemption, commerce, and equal protection clauses), federal aviation statutes and regulations, and contractual provisions related to Federal Airport Improvement Program grant covenants, restrict Massport's ability to control the number and types of aircraft operations at Logan Airport. This point was reiterated throughout the responses to comments section of the Supplemental DEIS. See Volumes 4 to 11 of the Supplemental DEIS. In addition, the FAA has designated Hanscom Field as a general aviation reliever airport to Logan in the National Plan of Integrated Airport Systems (NPIAS). Massport has also taken steps to encourage the diversion of general aviation operations to Hanscom Field by not assessing landing fees at Hanscom Field. In 2000, Hanscom accommodated over 200,000 general aviation operations compared to 35,000 at Logan Airport.

Code	Topic 1	Topic 2	Comment	Response
19.8	Fleet Mix/Forecasts	2000 Base Year	Noise impacts measurement is substantially distorted because of the errors of the base case, which focuses on the 29M low scenario. The noise impacts predictions should be revised to focus on the actual year 2000 noise and runway use characteristics, and the year 2000 (less noisy all stage III fleet) to give proper base cases, and noise predictions should focus on realistic high RJ scenarios.	The appropriate comparison for assessing future year conditions and the effectiveness of the Airside Project improvements, is a comparison of the Preferred Alternative to the No Action Alternative for each fleet year, rather than a comparison of future year operating conditions to a Base Case. For all future fleets, the Preferred Alternative shows significant delay reduction benefits over the No Action Alternative. The 29M Low scenario, while not the Base Case, was selected for sound insulation mitigation because it is the worst case future fleet. The Airside analysis shows that there are more people in the 29M Low 65dB DNL contour for the Preferred Alternative than in any other fleet. Furthermore, inclusion of some Stage 2 aircraft in the 29M Low fleet does not significantly overstate noise impacts compared to a current Stage 3 compliant fleet. In the shift to a post 1999, 100 percent Stage 3 fleet, some Stage 2 aircraft received hushkits which results in only a small improvement in the noise of individual overflights and hence, little improvement in DNL. Since the total number of Stage 2 operations in the 29M Low fleet is relatively small and a revised 29M Low fleet scenario would likely include a significant number of hushkitted airplanes, the presence of the Stage 2 airplanes in the 29M Low fleet only overstates noise exposure by only a few tenths of a dB, which does not represent a material difference. The Supplemental DEIS/FEIR analyzed the long-term 37.5M High RJ fleet, which includes a higher number of Regional Jets than any of the other Airside fleets. With a greater share of new technology jets, the 37.5M High RJ fleet is significantly quieter than the 29M Low fleet. Refer to Chapter 6, Section 6.2.7 of the Supplemental DEIS/FEIR for a complete discussion of the noise impacts of the 37.M High RJ fleet and the various project alternatives.
19.9	Alternatives	Part 161	The Massport document doesn't commit to initiate a Part 161. It also claims that the expansion of the night over water rule is unfeasible because it would cause congestion, but it neglected to explore the possibility of 15 minute "platooning" to achieve adequate capacity while requiring over water landings and takeoffs.	The FAA's Part 161 process is a difficult process for airports to undertake because of the demanding legal requirements that must be satisfied to obtain approval for access restrictions. Therefore, the airport proprietor has not proposed any formal changes to its noise abatement regulations that would require a Part 161 process. The official preferential runway use policy for Logan Airport states that the FAA will observe the nighttime overwater routing priorities from 12:00 midnight to 6:00 AM whenever wind and weather conditions permit. In practice, controllers try to switch to the Runway 33L/15R configuration as soon after 11:00 PM as demand permits. Presumably, “platooning” suggests alternating periods of arrivals to 33L and departures from 15R. Implementing such a program before midnight would still increase delays significantly, and it would also increase the ATC complexity and likely raise safety issues. Finally, it would require a change in the federal policy for handling aircraft on a first-come first-serve basis. Refer to Section 4.3.6 of the Supplemental DEIS/FEIR for a discussion of the impact of extending the overwater routing preference nighttime period from 10:00 PM to 7:00 AM.
19.10	PRAS	Utilization	The May 1999 certificate called for a review of the effectiveness of PRAS which the Massport document does not properly carry out. The document ignores the fact that the FAA tower ignores PRAS not out of ill will, but because of pressure of congested and delayed operations.	When airport demand is high and/or weather is an issue, the controllers' options are very limited; under these conditions, PRAS is designed to give the same recommendations as the controllers would normally adopt without PRAS. Given accurate information on weather, PRAS does not recommend runways that are unusable, nor does it select configurations that cannot handle the expected demand if this is possible. Section 4.3.4 of the Supplemental DEIS/FEIR reviewed the historic effectiveness of PRAS and showed that performance has improved in recent years.
19.11	Mitigation	Sound Insulation	The Massport document limits the sound proofing to the availability of FAA funds.	Over the last 15 years, the FAA and Massport have spent over $100 million on sound insulation in the communities surrounding Logan. The FAA

Code	Topic 1	Topic 2	Comment	Response
				acknowledges that Massport has committed to provide any additional funds that may be necessary to complete the sound insulation of homes newly included in the 65dB DNL as a result of the implementation of the Preferred Alternative. See Section 4.1 and Appendix B of the Final EIS.
19.12	Cultural Resources	4f Impacts	The Year 2000 base year is not properly defined, the report conceals the fact that 4f properties in Chelsea and the South Boston Waterfront parks and several parks in East Boston and Chelsea are not within the 65 decibel contour without the runway, but are impacted by 65 DB noise with runway 14-32.	Section 4(f) requires the identification of resources that would be used by any alternative under consideration. There are no parklands, historic properties or sites, or other Section 4(f) resources on the airfield in the area of the proposed runway and taxiway improvements. While the Airside analysis demonstrates that there are also no existing parklands in those areas where the 65 dB DNL contour for the Preferred Alternative extends beyond the 65 dB DNL contour for the No Action Alternative (Alternative 4), there is a residential historic district within the 65 dB contour which is assessed in the noise impact analysis (see Section 6.3 of the Supplemental DEIS/FEIR). According to FAA Part 150 land use compatibility standards, parks are considered to be a compatible land use within the 65-70 dB DNL noise contour. Therefore, any new parks (such as those proposed along the South Boston Waterfront) would be considered a compatible land use based on the Part 150 standards.
19.13	Runway 14/32	Unidirectional Commitment	The unidirectional nature of runway 14-32 which the Secretary required be incorporated in a Section 61 finding was included in the Massport document, however, the FAA actually has primary jurisdiction in this matter, and there is not an adequate involvement of FAA in this "commitment" to make it meaningful.	The Runway 14/32 concept under review in the Supplemental DEIS/FEIR allows unidirectional operations only - i.e., all aircraft arrivals would occur over Boston Harbor to the Runway 32 approach and all departures would initiate from Runway 14 heading out over Boston Harbor. State approval under MEPA and federal approval under NEPA will allow Runway 14/32 to proceed only on a basis consistent with the stated unidirectional limitations. Consistent with any such approvals, Massport will light and stripe Runway 14/32 to accommodate unidirectional operations only. Appropriate supporting documentation will also be issued (e.g., appropriate designations in the Airport/Facility Directory, and Notices to Airmen or NOTAMS). Furthermore, the location of proposed Runway 14/32 involves physical limitations that reinforce the unidirectional requirements of that improvement concept. The Hyatt Hotel and Conference Center, which is 174 feet high, is within 1,300 feet of Runway 14. The location of the Hyatt Conference Center invades applicable FAA approach surface glide slope requirements, thereby precluding arrivals from the west to the Runway 14. Another factor limiting westerly operations on Runway 14/32 is the lack of available facilities to allow aircraft to taxi to Runway 32. The unidirectional limitations of Runway 14/32 allow for maximum use of over-water operations which would thereby limit operational impacts over residential areas. To reinforce these important environmental benefits, Massport has designated the intended unidirectional limitation on Runway 14/32 as a mitigation measure. It is anticipated that any state and federal approvals will also strictly reinforce the unidirectional limitations intended for Runway 14/32. Given the physical and operational considerations discussed above, FAA believes that limiting Runway 14/32 to unidirectional operations only is an appropriate decision by Massport as airport proprietor. The unidirectional limitation in discussed in further detail in Section 4.1.1 of this Final EIS.
19.14	Air Quality	Emissions Fees	The Secretary and Administrator should require that the airside initiative must be made more specific and become a Section 61 commitment of the revised Final EIR/S, with explicit approval by FAA of using an added fee per landing to finance the offsite purchases.	Massport's Section 61 Findings are the result of a state process that has been completed and are not subject to FAA approval. The FAA is currently reviewing the concept of an emissions based landing fee in a national context, unrelated to the Airside Project. Furthermore, the Preferred Alternative results in lower emissions compared to the No Action alternative.

Code	Topic 1	Topic 2	Comment	Response
19.15	Centerfield Taxiway	Safety	The local community has raised concern with the safety and air pollution impacts of the proposed centerfield taxiway, which requires taxiing aircraft to cross active runway 4L-22R in order to access the proposed taxiway from the terminals.	The Centerfield Taxiway improvement concept proposed in the Airside Improvements Planning Project EIS evolved from prior studies including the FAA's Logan Capacity Enhancement Plan (October 1992); the Logan Runway Incursion Mitigation Plan/Taxiway Relocation Study (December 1993); and the Logan Airside Improvements Feasibility Study, Phase 1 Report (July 1995). The Centerfield Taxiway improvement is designed to improve ground movement efficiency and safety and to reduce taxiing delays, thereby reducing associated noise and emissions. The Airside EIS analysis has firmly established the purpose and need for the Centerfield Taxiway. The same number of aircraft will need to cross active Runway 4L-22R, with or without the Centerfield Taxiway. Without the new taxiway, these aircraft must queue up and then cross sequentially at the same place, whereas with the Centerfield Taxiway they can cross closer to the terminals and several aircraft can cross simultaneously. Consequently, the taxiway will reduce ground delays and associated noise and air pollution. Since there will be fewer crossing events, it will also reduce the probability of a runway incursion. Please refer to Chapter 3, Section 3.6.1.1 of this Final EIS for a discussion of the Centerfield Taxiway.
19.16	Centerfield Taxiway	Safety	The National Transportation Safety Board has raised concerns with the runway incursions nationally and at Logan. In addition, concern has been raised that the added taxiway would be confused with a runway by landing pilots. The Massport document does not analyze these safety concerns.	It is highly unlikely that a professional pilot would ever mistake an active taxiway for an active runway. There are many differences between taxiways and runways: pavement markings, lighting, navigation systems, width. Pilots are intimately aware of these differences, and centerfield taxiways are a very common airport layout. Pilots study airport diagrams before landing and all commercial flights have two pilots to cross-check each other. Student pilots are prohibited from flying to or from Logan. The FAA has established airport design principles and standards in Advisory Circular 150/5300-13 which, among others, specify minimum separations between runways and taxiways and recommend a parallel taxiway for each runway. The Logan taxiway improvements will comply with all FAA design standards, including the distance from the runway. In fact, the centerfield taxiway would be the same distance from Runway 4L/22R as Taxiway November, and twice as far from Runway 4R/22L. All of these factors make landing on the centerfield taxiway "highly improbable." Even discounting all of these factors, a pilot would not attempt to land on an active taxiway if there were an empty runway alongside of it. There have been no incidents of inadvertent landings on the existing parallel Taxiway November/Kilo.
19.17	Centerfield Taxiway	Safety	The alternative to the taxiway of improving management of the gate hold procedure, so that aircraft would not "push back" until takeoff is actually feasible, thus avoiding unnecessary taxiway congestion, air pollution, and delay, was proposed by the community, but not analyzed in the Massport report. The Secretary and Administrator should require that this be addressed in the revised Final EIS/R and adopted instead of the taxiway.	Gate holds and delayed pushback clearances are already routinely used for departing aircraft at Logan Airport to reduce congestion and unnecessary ground idling. Delaying aircraft at the gate until the departure runway is clear would increase airfield delays astronomically.

Code	Topic 1	Topic 2	Comment	Response
19.18	Natural Resources	Upland Sandpiper	The May, 1999 certificate required a detailed relocation plan for the Upland Sand Piper, whose habitat would be destroyed by the center field taxiway. The Massport document does not include this. The site a Cape Cod is not clearly available, and it's not clear relocation will actually be effective. The impact can be avoided by a combination of demand restraint and gate management, combined with a relaxation of first come first served to prioritize large aircraft and critical flights. The Secretary and the Administrator should require the revised Final EIR to include a Section 61 and Record of Decision commitment to not build the taxiway but instead adopt, with FAA cooperation a revised gate hold regulation.	The Supplemental DEIS/FEIR clearly establishes the purpose and need for a Centerfield Taxiway. Gate holds and delayed pushback clearances are already used for departing aircraft at Logan Airport to reduce congestion and unnecessary ground idling and do not negate the need for the Centerfield Taxiway. The Upland Sandpiper is not a federally protected species. However, under state law, Massport will be required to obtain a Conservation and Management Permit from the Massachusetts Natural Heritage and Endangered Species Program (MNHESP). As part of that process, Massport has worked closely with MNHESP to develop an onsite and offsite mitigation program that will provide a net benefit to the Upland Sandpiper local population. It is anticipated that the mitigation program will be underway before construction of the Centerfield Taxiway or the Delta Taxiway modification. The concept mitigation plan presented in the Airside Project EIS/EIR has evolved through discussions between Massport, the MNHESP and the Massachusetts Air National Guard and/or designee to conform to all applicable requirements of the Massachusetts Endangered Species Act (MESA). It is expected that an area of former Upland Sandpiper habitat at Camp Edwards on Cape Cod will be restored to grassland habitat by removing woody and shrub vegetation to encourage enhancement of the Upland Sandpiper regional population. This restoration area is part of a larger existing habitat that has been degraded over the years and the available area has been decreased. The Massport program to restore and expand the habitat will only benefit the overall Upland Sandpiper population. This restoration effort provides a unique opportunity to expand grasslands in the Commonwealth far in excess of the 40± acres to be lost at Logan Airport.
19.19	Environmental Justice	2000 Census Data	It relied on the 1990 Census to argue that East Boston is not an environmental justice community, when available Year 2000 Census shows that low income and minority populations have grown dramatically in East Boston, and are subjected to cumulative impacts caused or exacerbated by Logan Airport.	The 2000 Census data regarding minority populations was not available when the Supplemental DEIS/FEIR went to print in March 2001. The Environmental Justice analysis relative to minority populations has been updated in this Final EIS to reflect Year 2000 Census data on total population, race and ethnic origin at the block level, which was released by the U.S. Census Bureau on March 21, 2001. (Comparable data on income will not be released by the Census Bureau until June 2002.) While the Census 2000 data show that the minority population of the communities around Logan has increased, particularly in East Boston, the percentage of the population within the 65 dB DNL contour for both the No Action and Preferred Alternative that is minority is the same. Approximately 34 percent of the Year 2000 population within the Preferred Alternative's 65 dB DNL contour is minority, compared to the Year 2000 baseline for Boston, Chelsea, Revere and Winthrop which is 48 percent minority. Therefore, the Preferred Alternative does not result in a disproportionate adverse impact on minority populations. Refer to Section 3.8.4 of this Final EIS for additional information.
19.20	Reduced Minimums	Commitments	Massport and FAA agreed to retain current decision heights so the aircraft would prefer to use the superior over the water approach at 4R. The communities advocated CAT III for Runway 33 to make a second over water approach available. This Massport document does not show the respect to the community of properly recording the prior promise.	The reason for the current decision heights stated in the comment, i.e., "...so the aircraft would prefer to use a superior over the water approach at 4R", is incorrect. When ILS equipment was installed on Runways 22L and 27 in 1977, the fundamental purpose was to provide lower approach minimums on these runways. The FAA has preemptive statutory authority over the navigable airspace and typically the establishment of landing minimums is a simple administrative action which is categorically excluded from the EIS process. However, in the spirit of public cooperation, the FAA executed leases with Massport agreeing to submit the reduced minimums to a full EIS process before implementing them. To satisfy this commitment, the FAA and Massport have included the reduced minimums in the Airside Improvements Planning Project. The operational analysis conducted in this EIS reflects the reduced approach minimums for Runway 33.

Code	Topic 1	Topic 2	Comment	Response
19.21	Runway 14/32	Flight Tracks	To the southeast, approaches to runway 33 and proposed 14-32 would intersect over Hull, requiring that one or the other be offset. If approaches to 33 can be offset to the north, the result would be less noise over Hull.	The approach path to Runway 32 will be parallel to the existing approach to Runway 33L, so the two do not intersect. The approach to Runway 33L is a precision ILS procedure and cannot be offset from the runway centerline. Landings on Runway 32 will involve a slight turn to the left under visual conditions before touching down.
19.22	Runway 14/32	Wind Restriction	The possibility of "wind restricting" 14-32 is discussed in the Massport document in an unsatisfactory way. The report claims it would result in noise reduction in the 27 and 33 communities, but that delay reduction would be somewhat less. It is not clear why there would be any less delay reduction for winds at or below 17.5 knots. Massport also asserts that the FAA control tower "wouldn't do it". It is hard to understand why this would be much less problematic than complying with PRAS during high delay situations, which Massport insists is achievable.	A wind restriction of even 5 knots would mean that a runway configuration with less capacity would have to be utilized sometimes, thereby increasing delays. A higher wind speed restriction would increase the use of lower capacity configurations. Because wind speed and direction are dynamic random variables, the implementation of such a restriction would increase controller workload, and any attempt to monitor it would be very difficult.
19.23	Cumulative Impacts	Land Use	Runway 14-32 would require the relocation of existing air cargo facilities, but the document does not fully describe the full impact on the industry or the impact on the Bremen Street East Boston neighborhood and the park where Massport plans to relocate some of these facilities, along with an expansion of the airfield closer to the Bremen Street.	The tenants of Building 60 are primarily involved in the business of consolidating and forwarding of freight and can relocate to available off-airport warehouse/industrial space in various communities around Logan Airport. They do not need to be located on or adjacent to Logan Airport, but will be relocated to areas of similar land use. The final choice of the relocation site will be up to each individual, eligible tenant. Massport will provide relocation assistance to all eligible tenants in accordance with applicable provisions of the “Uniform Relocation Assistance and Real Property Acquisition Act of 1970", as amended and Part 24 of 49 CFR, as well as MGL Chapter 79A and implementing regulations.
19.24	Peak Period Pricing	Profile	It has been clear since the 1980s that in the absence of regulation, over scheduling has been occurring at Logan causing both delay and adverse environmental impacts of noise and air pollution.	Overscheduling has occurred at Logan Airport, most notably in the early 1990s when three major regional carrier systems (affiliated with USAirways, Delta, and Northwest) were operating at Boston. At that time, peak hour activity levels exceeded 130 flights per hour during the peak summer season, and delays occurred even in favorable weather conditions. This condition subsided when Northwest Airlines' regional affiliate ceased operations, producing an immediate drop in flight levels. Subsequent consolidation in the regional carrier industry-particularly the establishment of a "triple code-share" by Business Express with Delta, American and Northwest-helped to prevent a return to the overscheduling pattern that occurred earlier in the decade. However, the acquisition of Business Express by American Airlines, Delta's establishment of a competing regional system at Logan Airport, and the emergence of the regional jet within the fleets of Logan Airport's leading carriers suggest that airline overscheduling could re-emerge in the near- to mid-term future. In its Section 61 Findings pursuant to the Massachusetts Environmental Policy Act, Massport committed to initiating the rule-making process to implement an enforceable peak period pricing program, or an alternative demand management program with comparable effectiveness, for Logan Airport. The objective of this program will be to avoid or reduce delays associated with overscheduling of Logan Airport's available capacity in good weather conditions. The goal is to have a demand management program in place before overscheduling conditions occur at Logan Airport. The FAA acknowledges that Logan Airport is one of the nation's most delayed airports and that Massport has committed to and will propose to implement a demand management program to reduce overscheduling delays. The FAA expects that any such program that is proposed for

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				implementation will be consistent with applicable Federal law. The FAA is currently working with the U.S. DOT to establish national guidelines for demand management programs at U.S. airports. As part of this national effort, Logan has been selected as one of three airports to serve as a case study for U.S. airport demand management strategies.
19.25	Alternatives	Sensitivity Analysis	..to understand the implication of various options at Logan it is necessary to construct a sensitivity analysis of the runway system within various levels of activity and aircraft size..	The FAA is committed to enhancing safety and increasing the efficiency of air travel by modernizing the air traffic control system and expanding the capacity of the national air transportation system. Logan is a critical part of the national system, and the FAA's goal is to satisfy the demand for air transportation at Logan as safely and efficiently as possible without artificially constraining demand. Lowering the peaking threshold to a level at or below 100 operations per hour was raised during the SDEIS Panel Process and was considered by the FAA, but was determined to be inconsistent with FAA policies. The Draft EIS/EIR and the Supplemental DEIS/FEIR provide a sensitivity analysis using a variety of activity levels with fleets of varying aircraft size. The Airside analysis has examined a range of five different historic and future passenger levels, as well nine different baseline levels of operations. By examining various improvement scenarios, both with and without demand management, a total of 15 different demand level scenarios were analyzed and presented, with multiple improvement packages analyzed at each demand level.
19.26	Public Participation	SDEIS Scope	Region 1 of EPA submitted a letter on November, 2000 requesting a series of analyses. The letter has been substantially ignored. Enclosed is a copy of the letter and the CAC letter (also substantially ignored).	The Region 1 EPA letter, dated November 6, 2000, and the CAC letter, dated December 5, 2000, were both carefully reviewed and considered by the FAA when it developed its scope for the Supplemental DEIS. Many of the comments in the EPA and CAC letters pertain to overall airport impacts, which are appropriately analyzed by Massport in its ESPR, and not impacts that would result from the proposed Airside Improvements which are the subject of this Final EIS. Furthermore, the FAA met with EPA Region 1 staff to discuss the EPA letter. Many of the comments made by the EPA involve disagreements with the FAA on various methodologies. One example is how to count populations for the purposes of Environmental Justice analyses. Nevertheless, the analyses presented in the Airside EIS comply with FAA policies.